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Textile World

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No Choice in Modernization

IN 1925, the *American Machinist* made a survey of the metal-working equipment in the machine shops of the country, and found that 44% of this machinery was more than 10 years old. Since practically every type of machine tool had been redesigned and improved during that period, it was assumed that this 44% represented obsolete equipment.

A similar survey for 1930, just completed by the same publication, reveals the fact that 48% of the metal-working equipment now in place is at least 10 years old, and consequently out of date. In other words, despite the fact that there has been more noteworthy development in machine tools during the last five years than in probably any other similar period in history, the percentage of machines now in operation, which apparently should be discarded, is higher than it was five years ago.

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Naturally it is impossible to apply the factual findings of this survey to the condition of manufacturing equipment in textile mills. It is, however, possible to apply certain warnings which it infers.

Dr. Julius Klein, Assistant Secretary of Commerce, summed them up briefly in a recent radio address: "Just at this time when industries abroad are waking up, when managers in Europe are equipping their plants with the best machinery they can find—huge quantities going from the United States for this purpose—many American manufacturers appear to be drifting into a dangerous situation where their factory equipment is relatively less effective."

We are thoroughly aware of the financial obstacles facing many textile mills which wish to modernize. Recognition of these obstacles prompted the presentation, by Henry G. Lord in our Annual Review and Forecast Number, of a tentative plan for buying textile machinery on long-term credit.

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It will never be true that all plants can be put into shape to produce efficiently. There are some manufacturers who, even if presented with new equipment, could not compete. The sooner they pass out of the picture the better.

But the majority of companies which have stood the test of the last lean decade, can utilize an efficient plant to advantage. It is up to those concerns to think of a depreciation fund, during 1931, as a sum of money to be expended upon modernization, and not as a book-keeping entry. It is up to them to consider the condition of their plants as a whole, and to lay plans, covering the next several years, for their rehabilitation, as quickly and as completely as it can be arranged financially.

"Such replacements can be made far more easily in dull times," states Dr. Klein. "Now is an especially advantageous time to buy machinery. The cost of materials is low. Manufacturers can give the very closest attention to orders, assuring the best in quality, workmanship, and servicing."

And—it might be added—1931 will be a year when textile manufacturers will not be able to postpone longer the purchase of equipment needed for replacement purposes. That is, of course, if they wish to stay in the game.

The Week in Textiles

as Reflected in This Issue

GENERAL

Debate Industrial South

That the South needs a larger industrial population supported by a prosperous farming class is the contention of W. D. Anderson, president of the Bibb Mfg. Co., Macon, Ga. in a debate with Dr. John Crowe Ransom, a professor of Vanderbilt University before an audience of 1,000 at Atlanta last week. *(page 22)*

Vestal Bill Pros and Cons

The pros and cons of Vestal Bill arguments were aired at a luncheon in New York this week. Textile manufacturers favored the protection for designs against piracy offered in the bill, while retailers opposed. *(page 59)*

Twist in Plied Yarns

The question as to whether twist in single-ply yarn is taken out by a reverse twist of the same number of turns is answered. *(page 38)*

Arbitration

Textile industry has given increased recognition to possibilities of arbitration during the last year. Long used in the silk trade, this substitute for law-court litigation in settling commercial disputes has spread to other branches of the industry. *(page 29)*

COTTON

Night Work

George Sloan, president of The Cotton-Textile Institute, reported to President Hoover and Secretary Lamont, at White House conference, on progress of move to eliminate night employment of women and minors, and received indications of President's sympathetic interest. At time of going to press, 79% of the industry, and 72% of the night runners had announced their endorsement of the policy. *(page 23)*

Cotton Makes New High

Raw cotton made new high ground for the movement this week with offerings limited and demand coming largely from the trade. On Wednesday, May contracts sold up to 11.45 or 165 points above recent low point. *(page 51)*

Master Mechanics Forum

The efficacy of various boiler systems, the relative efficiency of group and individual drives, and the value of various types of bearings were discussed at the forum for master mechanics held by the National Association of Cotton Manufacturers recently in Boston. *(page 26)*

Promoting Cotton

Another of the many enterprises to promote the use of cotton is a cotton festival to be held in Gastonia, N. C. March 6 and 7. Uniform consisting of white cotton tuxedos has been adopted by a leading dance orchestra in the same town. *(page 61)*

Reversing Card Flats

The present direction of motion of the revolving flats loads them with dirt at the beginning of the carding action. The question has been raised as to whether it would not be advisable to reverse the motion. *(page 33)*

Cotton Goods Call Broadens

With the rise in raw cotton comes broader demand for cotton goods. Prices are trending upward and some sellers are holding their goods back for still higher levels. *(page 47)*

Gastonia Bank to Reopen

As a result of the efforts of textile men in the locality sufficient subscriptions have been secured to make probable the reopening of the First National Bank of Gastonia, N. C., early next month. *(page 61)*

WOOL

Transposing Weaves

Any diagonal twill can be transposed into several different weaves, often with interesting and attractive results. The work is instructive and useful to the designer. *(page 24)*

The Textile Outlook

TEXTILE men are now stressing the hopeful elements in their business instead of lamenting the depressing factors. In several branches of the field there has been tangible improvement; in others the stage is set. Throughout them all however remains a feeling of caution, and, among wise manufacturers, a resolution to adhere to working on orders and not stock. Curtailment has helped to lift the clouds and it must be used if the sky is to be kept clear. . . . Cotton moved to new highs since December bottom and goods have been stimulated. Wool is more optimistic and its products are in better demand. Silk is quiet and unsettled after too brisk a recovery. Knit goods for spring are moving again but fall promises to develop slowly.

The Business Outlook

BUSINESS changes from week to week are still slight and not uniformly upward. On balance, January averaged a little better than December, and the first two weeks of February have shown resumption of rising tendency. Our index has risen from revised figure of 77.5% of normal for week ended Feb. 7 to 78.5% (preliminary) for the latest week. Steel activity continues to increase slowly; building contracts, especially in the residential field have lately shown improvement, and carloadings are doing a little better. Commodity prices are somewhat steadier. . . . There is still no evidence of the expansion of bank credit that must precede increased construction and commercial activity by several months.—*The Business Week.*

"F.O.B. the Mill"

"F.O.B. the mill" will again become common practice in the wool goods industry if the opinion of manufacturers who met recently at the Wool Institute prevails. *(page 61)*

First B. A. Wool Auction

The first public auction of wool ever held in the Buenos Aires market was held recently and 150,000 lb. were sold. Prices were low. *(page 62)*

Wool Goods Active

Most wool fabrics have been active lately but the fact that many sellers are agreeing to bill these sales at prices to be named later for fall, is making a dent in the margin for profit. *(page 47)*

Worsted Yarns Firmer

Volume is lacking in current business in worsted yarns but prices are firmer nevertheless. *(page 53)*

KNIT GOODS

Low-Luster Hosiery

Low-luster hosiery of good strength and elasticity can be knit from 20-turn regular tram, is the conclusion drawn from a series of investigations by authorities. *(page 28)*

Glove Silk Defects

Avoidable defects in glove silk sometimes occur from faulty and rusty needles or from carelessness in the finishing room. *(page 37)*

Optimistic on Grenadine

G. L. Westcott, president of Westcott Hosiery Mills, Dalton, N. C., owners of the Young patent on hosiery made from counter-twisted yarns, popularly known as grenadine, is very optimistic on the future of these goods. *(page 49)*

Hosiery Curtailment

Curtailment campaigns in hosiery are now spreading to seamless goods. The policy seems to have done much to improve full-fashioned goods. *(page 49)*

Bathing Suits Lag

Bathing suit contracts this year are behind those at this time in 1930 but with most mills the difference is slight. Spring sweaters are selling more briskly but fall goods are slow. *(page 49)*

Spring Underwear Gains

Spring underwear business, late in starting, is picking up. Interest in heavyweight lines is limited. *(page 49)*

SILK

A "Testing Period"

That raw silk is passing into a "testing period" is stressed by Dr. L. H. Haney in the TEXTILE WORLD Analyst. He expects reactions on the grounds that recovery has been over done, but doubts return to lows. *(page 43)*

Raw Silk Quieter

Raw silk is quieter as mills hesitate on future commitments. Yokohama is much firmer due to March closing of filatures. *(page 54)*

Silk Yarns Weak

Thrown silk prices are weak and the market quieter. Spun silk sales are lighter but a steady though smaller demand remains. *(page 54)*

Broadsilks Cautious

Flat crepes and cantons are stressed in silk prints for spring, but market observers doubt stability and wise mills are avoiding accumulations. *(page 47)*

RAYON

Doubts Rayon Stability

A bulletin issued by Standard Statistics Co., New York, regards the outlook for the rayon yarn industry as uncertain with further price cuts as possible. *(page 63)*

Uncovered Rayon Needs

Rayon market moves briskly. Buyers, however, are cautious, but disclose considerable uncovered needs. *(page 54)*

Group of exhibits at "Stolen Designs Show," held at the Art Center, New York, by the League for Suppression of Design Piracy, as an argument for enactment of Vestal Bill, now before the Senate. Textiles, ornaments, statuary, architects' plans, as shown above, are among the designs now being "stolen" by competing firms, it is claimed.

FINISHING

Photo-Electric Cell and Color

Photo-electric cell does not supply new method of color measurement but does greatly reduce time required for measurement. Dr. Walter M. Scott "de-bunks" many of the claims made for it, but predicts a great future for its application in the color work of the textile industry. *(page 18)*

Hosiery Dyeing

Even when soft water is available, use of penetrants in hosiery dyeing is found to aid in obtaining satisfactory results. *(page 36)*

Stripping Weighted Silk

Special methods for stripping color from weighted silk fabrics avoid loss of weighting material and permit successful redyeing. *(page 37)*

Finishing Sewing Thread

Formulas are given for producing the slip finish necessary on thread which is to be used on the new high-speed sewing machines. *(page 37)*

Streaks in Dyed Plush

Faults attributed to the dyer are traceable to mixed pile yarn employed in manufacture of the fabric. *(page 38)*

Photo-Electric Cell Has Definite Place in Color Measurement

By Walter M. Scott, Ph.D.

ADAPTATION of the photo-electric cell to the measurement of color has been followed by a large amount of publicity within the last few years. This publicity has not been confined to the various technical journals which serve all branches of industry, but has spread throughout the public press of the entire country. Popular writers have been intrigued by the possibilities of an instrument which could automatically measure and record colors, and their writings have resulted in a very general impression that the photo-electric cell is a panacea for all color troubles.

The textile industry, of course, makes a wide use of color and it deals with a greater variety of colors than any other major industry. Hence it is regarded as the most promising field for the sale of these new instruments, and a large proportion of the propaganda has dealt with prophecies concerning the probable revolutionizing of the science of color on textiles by the photo-electric cell. Enthusiastic optimism of the promoters has inevitably given rise to some greatly exaggerated claims. In fact, the textile manufacturers are led to believe that at last they are about to attain the goal of "color standardization"—that widely used and often much abused term.

There is a need at the present time for a careful presentation of the facts, without minimizing the remarkable progress which has already been made and also without exaggerating the future possibilities. This, perhaps, can best be done by giving a resume of the actual accomplishments up to date and a brief discussion of the further developments which are visualized by some of the leading authorities on the science of light and color. There should be mentioned first, however, two points which are of the utmost importance for a clear understanding of the true situation. They are:

1. The photo-electric cell does not provide a new method of color measurement. It simply furnishes a rapid means of obtaining measurements similar to those which have been made by physicists for many years.
2. The instruments which utilize the photo-electric cell, strictly speaking, do not measure color at all. They simply measure relative light energy which is transformed into the sensation known as color only after it enters the normal human eye.

Does Not Measure Color

It is essential that this second distinction should be clearly understood; and yet unfortunately it is either ignored entirely or glossed over in most of the popular articles on the subject. The great German scientist Helmholtz first emphasized the fact that color as the eye sees it has three attributes or dimensions. This theory is now accepted without question by our leading psychologists and physicists. These attributes of color have been given a great variety of names, but for the purpose of this article they will be called hue, value, and chroma. Hue is the quality by which we distinguish a red from a yellow, a green, a blue, or a purple. Value is the quality by which we distinguish a light color from a dark one; i.e. a pink from a maroon, or a white from a black. Chroma is the quality by which we distinguish a strong (or pure) color from a weak one, i.e. a golden yellow from an old ivory. In a previous article by the author (*American Dyestuff Reporter*, Dec. 10, 1928, p. 773) there is given a detailed description of each attribute and a list of the various names by which they are called.

None of the instruments, which have been developed up to the present time, will measure these psychological attributes of color directly. Thus we have to content ourselves with measuring the relative light energy which is transmitted to the eye and striving to correlate these measurements with the color sensations transmitted from eye to brain. The present status of this correlation will be discussed later in this article.

Measurement of the spectral distribution of light energy has been a subject of experimentation and research ever since the discovery of the fundamental principles of the color spectrum by Sir Isaac Newton. Sir Isaac created a great furor in the scientific world of his

day, and many of his fellow scientists were quick to take issue with him. However, recognition of the soundness of his theories became more and more general until at the present time there is practically a unanimous agreement that the sensation known as color is a function of the spectral distribution of the light energy which is reflected or transmitted by color media.

Determination of Light Energy

Development of instruments for measuring relative light energy has kept pace with the increasing knowledge of the science of light and color. First there was evolved the photometer, which is designed primarily to measure the total amount of light energy reflected from or transmitted by a sample. Simple photometric measurements furnish a basis for comparing colors with respect to their value, but take no account of hue and chroma.

Addition of a spectroscope to the photometer provides an instrument known as the spectrophotometer, which is capable of measuring the amount of light energy reflected from or transmitted by a sample at any wave length throughout the spectrum. In all spectrophotometric measurements the sample is compared with a standard (usually magnesium oxide or carbonate, or a piece of white glass) which has been calibrated with respect to the spectral distribution of the light energy reflected by it. The beams of light from the sample and from the standard are directed into two adjacent photometric fields, and the intensity of one or the other is adjusted until the two fields appear equal in brightness to the eye of the operator. Several types of spectrophotometers have been on the market for a number of years—the most generally known being the Koenigs-Martin Spectrophotometer, the Bausch & Lomb Spectrophotometer, and the Keuffel & Esser Color Analyzer. Measurements furnished by these instruments form a basis for comparing all three of the attributes of color (hue, value, and chroma) and are regarded as a fundamental source for the specification of color.

The photo-electric cell adds one more refinement to this method of measurement. Because of its sensitivity

Sheldon Electric Co.

Colorscope

to very small differences in light intensity, is can be substituted for the eye in making the comparison between the beam of light from the sample and the corresponding beam of light from the standard. This is said to eliminate from the spectrophotometric measurements any variables due to differences in the eyesight of individual operators.

Photo-Electric Cell Not New

This particular application of the photo-electric cell is not as recent as some of the aforementioned propaganda would lead us to believe. There are literature references to the spectrophotometric use of the photo-electric cell as far back as the year 1901. By the year 1915 we find investigators making extensive use of this particular adjunct to spectrophotometry. One of the first practical photo-electric spectrophotometers for every-day use was developed by Dr. K. S. Gibson at the U. S. Bureau of Standards and was described in a paper published by him in October, 1919 (Bur. Stand. Scient. Papers, No. 349). Since that time the photo-electric cell has been used regularly in the Colorimetry Section of the Bureau of Standards as an assistant in the spectrophotometric measurements of colors.

Within the last few years there has been great activity along this line, and a number of inventors have vied with each other in producing color-measuring instruments which utilize the photo-electric cell. This activity has no doubt been stimulated by the great developments brought about in the radio industry, whereby it is now

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Good judgment and common sense tell the textile man that many of the virtues ascribed by popular writers to the "electric eye" are not possible. Lest the true value of the photo-electric cell in color measurement be lost sight of in the mass of propaganda which has appeared in daily newspapers and semi-technical publications, we asked Dr. Scott to outline the real uses, the present limitations, and the future possibilities of this device. Dr. Scott, who for ten years was chief chemist for Cheney Bros. and later, service director of the Munsell Color Co., is now connected with Gustavus J. Esselen, of Boston, in chemical and textile research and development. He is well posted on all phases of color in industry and needs no introduction to many of our readers.

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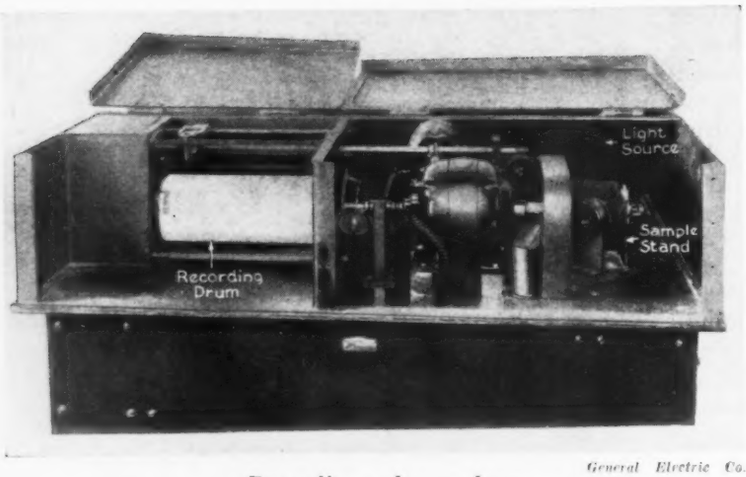


General Electric Co.

Recording color analyzer

possible to amplify enormously the minute current which emanates from the photo-electric cell. A brief description of the more important instruments of this type is given below. A more detailed description of these instruments will be found in a paper by Dr. K. S. Gibson, entitled "The Use of the Photo-electric Cell in Spectrophotometry," published by the Physical and Optical Societies, of London, England, in June 1930.

The T. C. B. Photocolorimeter, designed by Toussaint, is one of the earlier instruments to be produced on a commercial scale. It contains a series of six colored filters which are interposed in turn between the incandescent light source and the sample. In each case light energy coming from the sample is focused upon a photo-electric cell, and the deflection produced in a galvanometer is compared with that produced by a standard white under the same conditions.

Recent Developments

A photo-electric spectrophotometer has been developed by the American Photo-electric Corp. and is at present being marketed by Eimer & Amend. It consists essentially of a carrier for the sample, a light source operated by a storage battery, a spectrometer, a photo-electric cell with the requisite amplifiers for the current, a galvanometer, and a Wheatstone bridge. To make a reading on any material at any desired wave length it is necessary only to balance an electrical circuit by turning a dial similar to those on radio sets, and then, after interposing the material under examination, again to balance the circuit by turning another dial on which is read directly in per cent the proportion of the total light of that particular wave length which is transmitted or reflected by the material.

A portable recording and indicating color analyzer has been developed by P. J. Mulder and J. Rasek, of the University of Pennsylvania and is being marketed by the Burgess-Parr Co. [TEXTILE WORLD, Feb. 22, 1930]. In this instrument the light reflected from the sample is passed through a spectroscope and separated into its component parts. By turning a small crank different portions of this spectrum are successively admitted to a photo-electric cell and the current thus generated is amplified about a million times. The variations in this current throughout the entire spectrum are indicated by a sensitive galvanometer and also recorded on a photographic film for permanent reference.

An instrument known as the Colorscope has been developed by H. H. Sheldon, of New York University. [TEXTILE WORLD, Oct. 18, 1930.] In the words of the inventor, "the Colorscope is intended . . . to tell whether two colors are alike or different, and how much." This color difference is actually determined under limited special conditions and is expressed in arbitrary units which do not correspond very closely to either hue, value, or chroma. The two samples which are being compared are indirectly illuminated in an integrating sphere by the light from two powerful lamps and the beams of light coming from the two samples are focussed respectively on two photo-electric cells.

The current from each of the cells is carried through a balanced amplifier to a galvanometer which records the difference. Comparisons are also made through a red, a yellow, and a blue filter. It is proposed to establish limits of tolerance for color matches on the basis of the galvanometer readings.

Recording Color Analyzer

A very important development in this field has been contributed by A. C. Hardy of the Massachusetts Institute of Technology. He has developed an instrument which he calls a "recording photo-electric color analyzer" and it is now being manufactured by the General Electric Co. [TEXTILE WORLD, Nov. 8, 1930]. In this instrument the light from a powerful tungsten lamp falls upon the sample and also upon a magnesium carbonate standard. The light coming from the sample and the light coming from the standard are dispersed and a narrow band of each of the spectra falls alternately upon a photo-electric cell.

By an ingenious arrangement, the alternating current thus generated is enormously amplified and then operates a small motor in such a way that a pen automatically draws a complete spectrophotometric curve of the sample being analyzed.

The entire operation requires less than five minutes to perform.

Having described some of the more noteworthy developments in this field, let us analyze some of the claims which have been made for instruments which utilize the photo-electric cell. Reference was made at the beginning of this article to one claim which has been emphasized more by inference than by direct statement but which seems to have been quite generally accepted. That is the claim that the adaptation of the photo-electric cell introduces a distinctly new method of color measurement. It will be seen from the foregoing résumé that this it not true.

Color-Blind Observer

Another claim that has received great publicity is that the photo-electric cell entirely eliminates the human eye and therefore greatly increases the accuracy of the measurement by doing away with the variable human factor. In this connection it is not generally known that the so-called visual spectrophotometer, which was the forerunner of the photo-electric color analyzer, is so constituted that in measuring any color the eye only has to determine relative lightness and darkness. It is entirely possible for a color-blind observer to obtain as accurate measurement on the spectrophotometer as an-

other observer who is extremely sensitive to color differences. The colorimetry section of the U. S. Bureau of Standards has demonstrated that an experienced observer with a good instrument can, by averaging five or ten observations at each wave length, readily obtain a reading whose probable error is but a fraction of one per cent. The most optimistic claims for the photo-electric cell as a tool in color measurement do not contemplate much greater accuracy than this.

Erroneous Assumptions

A third claim which has also been more often inferred than stated is that the photo-electric instruments are so simple to operate that no previous specialized training is necessary in order to obtain color measurements which will be of immediate practical value. This is an entirely erroneous assumption. In the first place, none of the instruments so far developed are sufficiently fool-proof to guarantee that their readings will be consistently accurate day after day without the constant careful supervision of a highly trained technician. In the second place, they do not come any nearer than their predecessors to measuring color as the eye sees it. As stated previously, they actually measure the spectral distribution of the light energy which comes to the eye. These measurements may be used as the basis for computing the color in terms of the three primary color sensations (i.e., the trilinear coordinates) or in terms of dominant wavelength and purity, but none of these data have been as yet exactly correlated with the psychological attributes of color (i.e., hue, value, and chroma) which the normal eye distinguishes.

What It Contributes

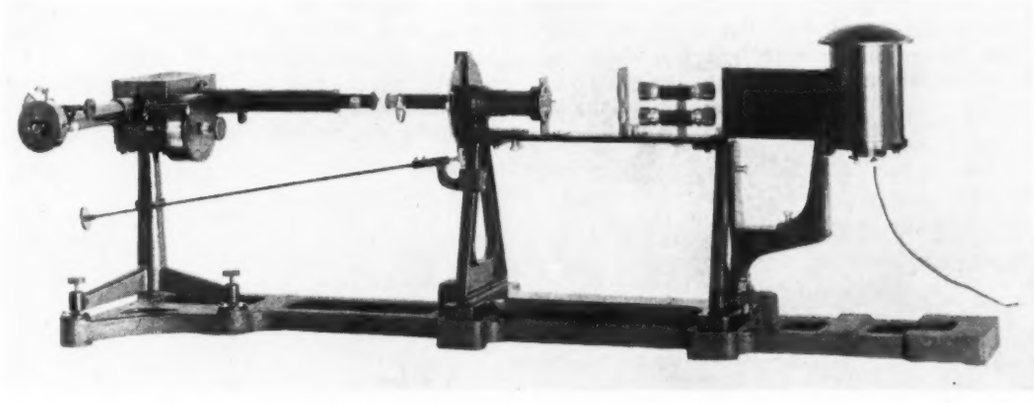
There is one claim for the photo-electric cell which is entirely justified: namely, that it greatly reduces the time required for measurement. This is a distinct contribution to the science of color measurement and eventually it may prove of far-reaching importance. It is evident that there is great need for the collection of accurate spectral reflection and transmission data on a large variety of colors and the correlation of these data with corresponding data on the visual comparison of the same colors by trained observers. This is the only way to establish the necessary fundamental facts relating to the conversion of the physical measurements of light energy into the psychological sensation of color and thus bridge the gap which now exists.

In conclusion let us predict that there is a great future for the photo-electric cell in the field of color measurement and specification in the textile industry. It is already being used with success for the standardization of dyestuffs in solution; enough research has been done along the line of recording the colors of standard dyeings and using these data to work out dyeing formulas for new shades so that it is reasonable to anticipate future successful applications of this method; and finally there is no doubt that the photo-electric devices will ultimately be of real benefit in measuring and recording standard shades and setting up limits of tolerance for subsequent matches of these shades.

Note of Warning

The real note of warning to textile manufacturers which is sounded in this article is that they must not look for an immediate millennium in this field. In the paper by Dr. Gibson which was mentioned earlier in this article there are noted five sources of error which might affect the accuracy of measurements by the photo-electric spectrophotometers. In order to insure consistently reliable results in the routine operation of such instruments the operator must be thoroughly familiar with the possible sources of error; he must be capable of detecting such errors by various checks on the reliability of his instrument; and he must be competent to eliminate the errors either by adjustments of the instrument or by the use of correction factors in calculating the results.

All the authorities who have had the most experience with spectral energy measurements—whether they are obtained visually or by means of the photo-electric cell—are agreed that a large amount of painstaking research is still necessary before such measurements can be readily translated into color terms which will have a practical significance. In the hands of a trained technician either the visual spectrophotometer or the photo-electric spectrophotometer are capable of producing certain results that are of immediate value, and there are numerous interesting possibilities which can be gradually developed. However, a great deal of initial disappointment and useless expense will be avoided if it is generally realized that the photo-electric cell is not yet qualified to take the place of an experienced operator.



Universal spectrophotometric outfit

Shall the South Go Industrial?

A debate between a college professor and a manufacturer

WHAT the South needs is a larger industrial population, supported by a prosperous farming class, declared W. D. Anderson, president, Bibb Mfg. Co., Macon, Ga., in debating with Dr. John Crowe Ransom, Vanderbilt University professor, on "Shall the South Follow the East and Go Industrial?" before an audience of 1,000 people at the Institute of Citizenship, sponsored by Emory University, Atlanta, Ga., Feb. 11.

Enthusiastic applause was accorded both speakers, but there was no decision on the debate. In upholding industrialism, Mr. Anderson presented an extensive array of statistics showing that average wealth and incomes in the South are lower than in other more industrial parts of the country. This condition he attributed to the fact that the South is still preponderantly agricultural.

"Farm wages in the South," the textile manufacturer asserted, "are only 47% of those paid in other sections of the country. The average annual income from farms in the South Atlantic states is only $635.

"The meagerness of the return for labor in the South is not confined to the farmers, by any means. Teachers in the South get but 67.7% as much as those in other sections. The clergy gets but 73% as much. College professors get but 87.7%. Income tax returns from the section are fewer than from any other part of the United States.

"Devotion to agriculture has caused this low economic scale. The only chance for the farmer in this section to prosper is through industrial development. In spite of the rapid growth made during the past decade by industry, 50% of the population of the South is still on the farm. There must be more workers in industry to provide a profitable balance.

"Ohio and Pennsylvania, great industrial and farming states, have struck a better balance. They have 1.6 men engaged in industry to one on the farm. Such a condition does away with the distant market, the long haul, and the unprofitable sale of products with which the South is now faced. A market is provided close at hand. And this is what the South so much needs; a market created by industrial enterprises.

"The South must have more money for schools, hospitals, and other facilities. Industry will bring it. The old system is impossible today. Someone must have money to spend. The industrial worker is a cash customer.

"The old civilization developed a fine life for those in the 'big house.' For the others it wasn't so good. Devotion to agriculture has led to nothing but poverty for the South. Development of industry will lead to the higher wages, the readier market, and the financial stability that this section needs. Not less agriculture, but more industrialism; not a forsaking of old ideals, but the addition of new industry.

"Our nation is moving toward a greater conception of universal brotherhood. If industrialism has done that, let's have more industrialism."

Opposing the further development of industrial enterprise in the South, Dr. Ransom contended that industry is already overcapitalized, overexpanded and overproduced. Since this is the case, industrialization of the South is no longer profitable, in the opinion of the Vanderbilt professor, co-author of "I'll Take My Stand," a recent book upholding the old South and its agricultural traditions. Consequently, the further diversion of capital from agriculture to industry in the Southern States would be a serious mistake.

"To be more concrete," Dr. Ransom continued, "let us look at the textile industry, the South's main industry. There are too many mills idle today. There are too many factories. There are too many men idle. Ask the leaders of industry today if they want the South to go industrial. Ask them if they want the farmers to quit their farms and come into the city for work.

"Later, perhaps, but not now. Five, ten or fifteen years from now they may. But even then they will hope that when the inevitable bumps come they will come at the expense of some other industry.

"Probably the South can never go industrial. It has had a late start. The field is already overproduced. Georgia, for instance, would never become a second New Jersey even if she should wish to do so strange a thing. Neither would she become a replica of industrial England, for industrial England is in ruins.

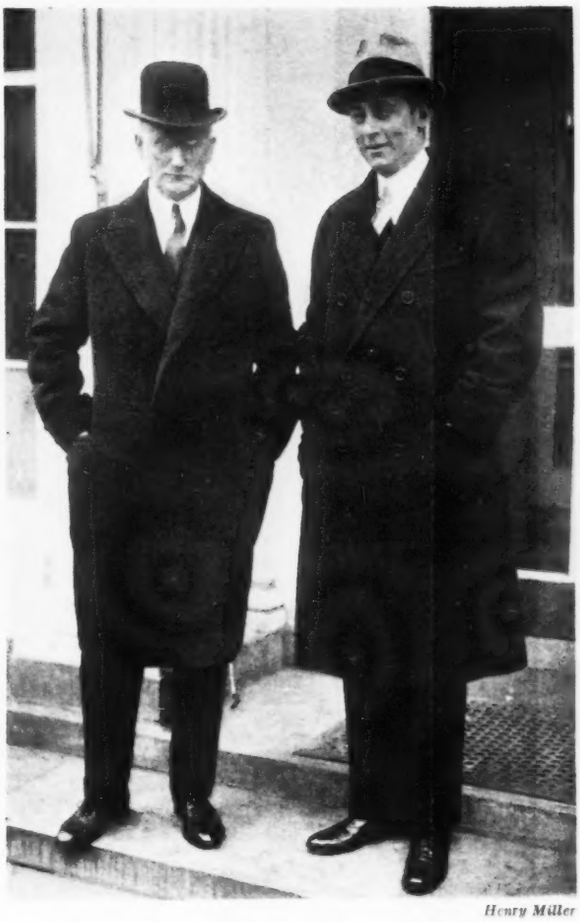
"The farmer has the choice of two economies, the agrarian and the industrial. He may either produce his livelihood on the farm, or he may turn his farm into an industrial project, growing money crops just as the factory produces commodities for sale. The industrial farmer exposes himself to the machine. He develops a money crop. His neighbors do the same. We have cotton selling for less than its cost.

"Too many farmers regard their land as an investment. They seek money from it, not goods on which to live. Tenants are forced to make money crops. Where are the orchards, the poultry and the milch cows they once had?

"The South must go agrarian. It must have a regeneration, not theological nor spiritual, but of the land. Millhands must go back to the farms. There are 200,000 miners in England who have not been in the mines since the war. They are living on a dole exacted from capital. Unemployment is a menace that can be halted. The state should assist people to go back to the land. By that method may we return to a permanent and stable prosperity."

Sloan Reports to President Hoover

on Progress of Move to End Night Work



Henry Miller

George Sloan and Secretary of Commerce Lamont leaving the White House after the conference with President Hoover

SEVENTY-FIVE per cent of the cotton mills in the United States including 70% of the night runners have announced their endorsement of the policy to eliminate night employment of women and minors, according to a report submitted to President Hoover Thursday of last week by George A. Sloan, president of the Cotton-Textile Institute of New York, at a White House conference with both the President and Secretary of Commerce Lamont.

Mr. Sloan stated after the conference that the President had evinced deep interest in the type of cooperative work being done by the cotton textile industry and was particularly impressed with the constructive efforts to stabilize employment for men and women through the new tendency to concentrate normal operations on the day shift. He wished for the movement every success, especially in view of its humanitarian aspects.

It was explained to the President and to the Secretary of Commerce that these policies have the approval of labor officials and that a final adoption of the policy to discontinue the night employment of women and minors, by mills individually, is contingent upon the endorsement not later than March 1, 1931, of 75% of the industry, including a corresponding percentage of the night runners. Mr. Sloan indicated that as to the latter an additional 5% must be obtained but that it was hoped and believed that this could be accomplished. It was also explained to the President that this movement will not entail serious dislocation of labor on March 1 since most of the readjustment has already been made through temporary steps heretofore taken.

In addition to calling upon the President, Mr. Sloan spent a good part of the morning with Secretary Lamont, who is deeply interested in the various constructive efforts being prosecuted by the cotton textile industry, and lunched with Col. Frederick H. Payne, Under Secretary of War.

Attends Greenville Meeting

Approximately 100 mill executives attended a meeting of the print cloth group in Greenville, Feb. 13, at which time Mr. Sloan announced that 75% of the print cloth mills, including 70% of night running mills in this branch of the industry, have subscribed to the recommendation on night operation for women and minors. It is a coincidence that progress in the print cloth group has been exactly the same as for the industry as a whole. Indications were that important additional support for the movement would materialize within the next week or two.

It was clearly evident from the discussion at the Greenville meeting that mill executives in this important branch of the industry are going to continue their efforts to prevent overproduction which has occurred in past years, resulting in detriment to the trade and employees of the mills.

Most of the mills manufacturing print cloths are running approximately full-time on the day shift with no night operation and it is understood that there is not likely to be any change in these policies for some months, or at least until such time as further improvement in market conditions should warrant a certain amount of night operation.

Donald Comer, president, Avondale Mills, Birmingham, Ala., made a splendid talk at the meeting in which he emphasized the humanitarian aspects of the Institute's recommendation. T. M. Marchant, president of Victor-Monaghan Co., of Greenville, and chairman of the print cloth group, presented an analysis of statistics revealing the effect of constructive merchandising policies. He commended the mill executives present for their successful efforts to prevent the disastrous consequences of overproduction and pointed to the results as an outstanding example of what can be done even during a general depression.

Attractive Effects in Woolens and Worsteds

Obtained by Transposing Weaves

By George R. Stevens

FIG. 1 shows a ten-harness diagonal-twill weave warped 1x1 and picked the same. Fig. 2 shows the resulting woven effect. Fig. 3 is the same diagonal twill after the straight rotation of the weave has been broken up or transposed into an entirely different weave, producing an entirely different woven effect, as shown in Fig. 4. The method or system of transposing goes back to hand-loom weaving in Scotland, and many of these old weavers were remarkably clever in this line of work.

It may be stated that all diagonal twills can be transposed and that any one diagonal twill can be transposed into several different weaves, according to the system of rotation used.

In the weave at Fig. 3 the system of rotation is every seventh thread. In order to make the procedure clear I shall invite the reader to transpose the weave in Fig. 1 with me. Let the reader start at the first thread on the left of Fig. 1, which represents the first warp thread of the weave design. Note that the risers are indicated by a black dot in the squares.

In Fig. 3 the rotation of change is every seventh bar of Fig. 1. Therefore the second bar of Fig. 3 will be No. 8 of Fig. 1, and the risers will be placed on the second bar of Fig. 3. Seven bars are then counted forward to the right, and it will then be found that the next bar will be 5, which is to be marked down on Fig. 3. Then we proceed to the third bar and so on, advancing seven bars each move throughout the ten bars of Fig. 1. The transposing of the weave will then be completed.

The next step is to transform Fig. 2, which represents the woven pattern of the original Fig. 1 weave, by following the same principle of rotation as explained when transforming the weave. This will develop the woven effect of the weave in Fig. 3, as illustrated by Fig. 4. Fig. 5 is a photograph of the woven cloth in fine worsted.

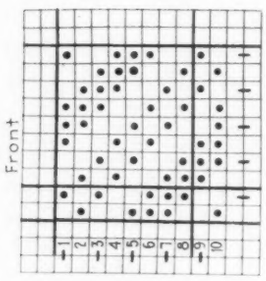


Fig. 1. Ten-harness diagonal twill

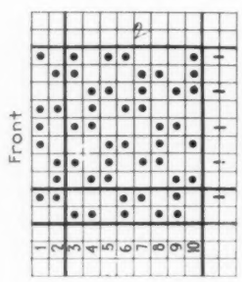


Fig. 2. Woven pattern resulting from Fig. 1

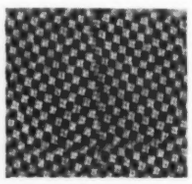


Fig. 5. Resulting fabric woven with fine worsted

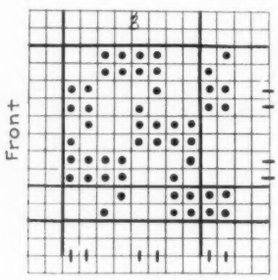


Fig. 6. Ten-harness weave with 2x2 dressing and filling pattern

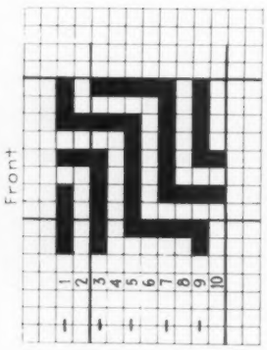


Fig. 3. Weave of Fig. 1 transposed

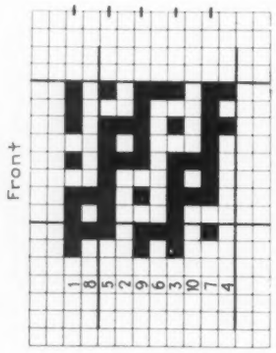


Fig. 4. Woven pattern resulting from Fig. 3

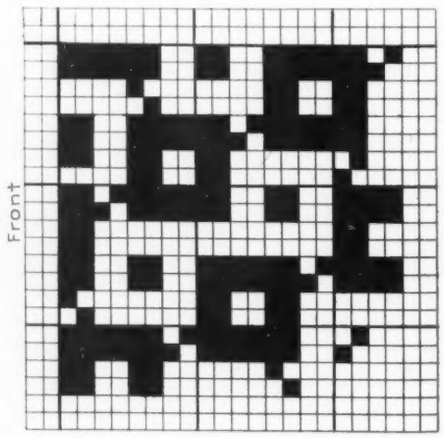


Fig. 7. Woven pattern resulting from Fig. 6

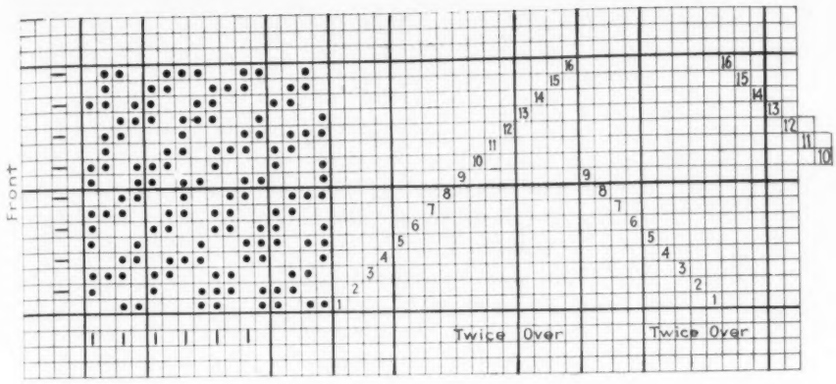


Fig. 8. Design for ladies' coatings

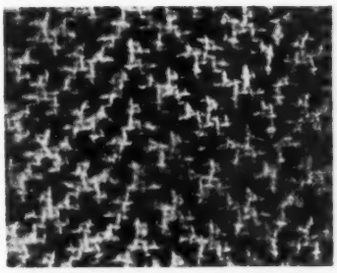


Fig. 9. Fabric woven according to Fig. 8 with 3⅝-run woolen

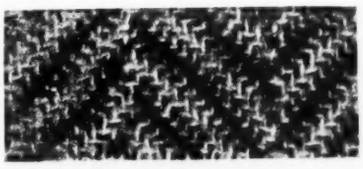


Fig. 11. Fabric woven according to Fig. 10 with 3⅝-run woolen

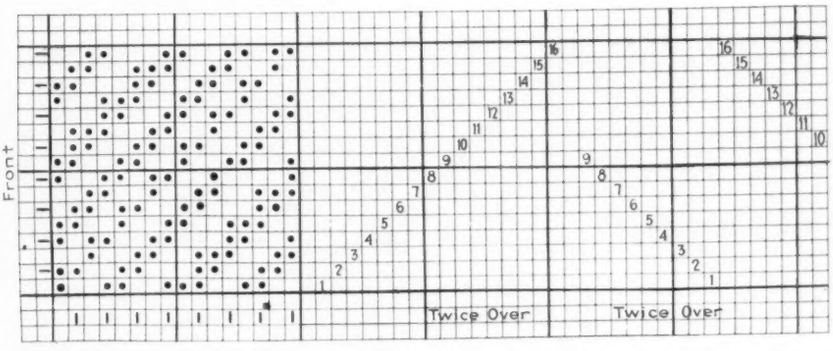


Fig. 10. Coating design giving knitted effect

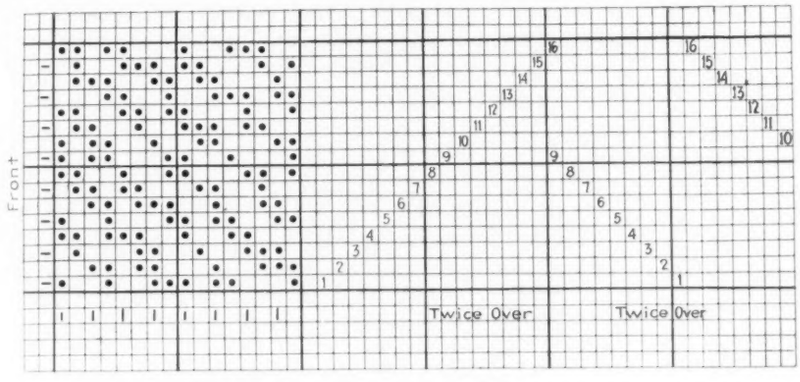


Fig. 13. Fabric woven according to Fig. 12 with 1½-run woolen

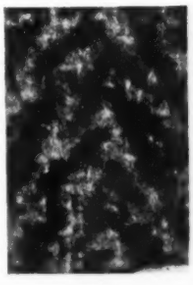


Fig. 13. Fabric woven according to Fig. 12 with 1½-run woolen

It is a very interesting and instructive process for anyone interested in textile designs to work out a number of different diagonal twills having different numbers of harnesses, and of course try different methods of rotation; that is, say, using every fifth bar as the "governing change." In such study it will be best to begin on even diagonals—that is, 6x6, 8x8, etc.—and to try out different numbers of rotation.

Fig. 6, which produces the effect shown in Fig. 7, is another weave on ten harnesses showing a 2x2 dressing and filling pattern, which produces the same woven design as Fig. 3 and 2x2 size of pattern. Although this illustration looks large, the reader must remember that it shows only eight threads per inch, while the woven or finished cloth may show from 24 to 32 or more threads per inch, according to the size of yarn used. The finished pattern is one-fourth or one-third less in size.

Figs. 8 and 9 show a design and weave which is very suitable for ladies' coatings. While the sample shown was woven in fine yarns, about 3⅝ run, it is suggested that it may be reproduced in larger yarns, say 2 run, in the various color combinations popular in ladies' coatings.

This weave and also the weave shown in Fig. 10 (see also Fig. 11) are new weave designs which make a very elastic cloth suitable for coatings. The cloth has the appearance of knit goods; but is superior to knitted cloth.

These two designs can be readily enlarged to double the size by adding to the drawing-in draft and to the weaving chain. Instead of being in only two contrasting colors, the warp and filling can be made up one dark color, one medium fancy shade, one dark color of harmonious shade, and one other medium color of another harmonious shade.

The weave in Fig. 12 (cloth, Fig. 13) represents a typical Scotch heavy overcoating. The style has been named "Glenorchy" coating. It is fully 32 in. finished. The yarns are about 1½ run, made up from pure all wool, long-stapled stock. The weave was originated three years ago, but the writer has not seen it on the market on this side of the water. The design should also be very good for ladies' coatings when made up in finer yarns.

The reader will note that these three fancy designs are laid out on sixteen harnesses, and all have the same drawing-in draft. The writer arranged this intentionally, so that, if any one desired to lay out a pattern warp in either design, there would be the opportunity of trying out all three patterns on one pattern up. This saves time and expense of several dressings, loomings, etc.

It may be mentioned here that the weave in Fig. 10 will make a very attractive coating pattern when woven with a filling of solid color or mixture in any of the shades popular in ladies' wear coatings.

Master Mechanics Voice Opinions

at Cotton Manufacturers' Forum

SPIRITED discussion of the efficacy of various types of boiler systems, the relative efficiency of group and individual drives, and the value of various types of bearings featured a meeting of master mechanics held under the auspices of the National Association of Cotton Manufacturers in the Chamber of Commerce Building, Boston, on Jan. 13, 1931. Ward Thoron, president of the association, called the meeting to order and after welcoming the members turned the meeting over to the chairman, who gave as the first topic for discussion the following question: "In the maintenance of plant buildings and machinery, what part should come under the direct supervision of the master mechanic, and what part under the rule of the overseer?"

One member replied that he believed that on light parts the loomfixer should be responsible for changing or replacing, but when it comes to heavy parts, where a certain amount of fixing is necessary, the machine-shop should be called upon. Another man stated that in his mill all maintenance work, including piping, electrical work, and repairs, comes under the jurisdiction of the master mechanic. He makes regular inspections of the plant and, if he finds repairs are needed which have not been reported to him, makes out the necessary requisition slip. On the other hand, repairs of machinery and parts come under the overseers of the various departments, who order any necessary work from the machine shop. A number of those present agreed that the method of a written requisition for orders is the correct procedure, since it places responsibility on some certain individual.

In discussing the question as to whether a regular inspection of mill machinery with reference to alignment and leveling and to mechanical condition should be made by the mechanical department, there was a sharp divergence of opinion, some believing that it is not necessary to have a regular inspection, while others found that this practice was well worth while. It was brought out that in one mill there is a boss loomfixer who looks over every gear which comes out of the looms to see what the trouble is. By this method gears with worn teeth are discovered, and the trouble is remedied before the gears are ruined. Any work which is too difficult to be performed by the loomfixer is sent to the machine shop, and spare parts which are kept in the weave room are substituted for those which are worn.

Asked what system of oiling was in most general use, a master mechanic stated that in his mill oiling of machines is left to the operators, and that he has found that they were apt to neglect this duty. Another member remarked that in his mill the oiling of machines is cared for by men who have been specially trained for that work. This method, he found, gives much better service at a slight additional cost, and breakage due to lack of lubrication has been practically eliminated.

Determining Cost of Repairs

A number of different plans for determining the actual cost of individual repair jobs were discussed. It was shown that today there is a demand that the mechanical department operate in a methodical way and have typical jobs on which accurate cost facts and figures and time factors can be calculated. It is also important, it was pointed out, when some particular part is constantly in need of repair, not merely to replace it but to try to determine the cause of the trouble and eliminate it. One of the master mechanics said that they had installed a Gantt system of repair records which calls for a duplicate requisition, one going to the shop and one to the cost department. A card is marked with the time required for each repair job; and a separate card, bearing the same symbol number as the first, gives the amount of material used. These cards are sent to the cost department, where the cost of a job is calculated, but unfortunately the master mechanic does not keep in close touch with the cost of repairs.

In another mill that has a similar system a copy of the cost-department figures is sent to the machine shop once a month. In a third mill this system is carried even further, the master mechanic sending a summary at the end of every week to each department overseer which shows the cost of maintenance and repairs in that room.

Systematic Replacement of Parts

In discussing the economy of systematic overhauling of looms and replacing of worn driving and other major parts, as contrasted with repairs made on order due to breakage, one member said that in his mill the former procedure has proved of great advantage. He said that in his plant "We found, on keeping a record, that we were going back to the same loom within short periods of time, not for the same repairs, but for replacing something else connected with it. We started in to make a general overhauling at the driving end of the looms, replacing frictions and driving gears, and adjusting and setting the boxes to give the proper mesh to the gears. In a period of three years and overhauling some 1600 of those looms, 75% of our repair orders was on looms which were not overhauled. In overhauling looms you might say that you are throwing away good material in which there is considerable service left, but we feel that the cost is more than offset, particularly when these looms are giving us 95% production and better running."

With reference to the question as to how often line-

shafts throughout the plant should be lined up and what method should be employed, one speaker expressed himself as believing that the lineshafts should be inspected regularly but that the frequency of this inspection should be governed largely by the type of construction of the mill. In the old wood and brick slow-burning construction, shafting is apt to get out of line more quickly and more often than with a more rigid modern construction. One rule that applies to all new buildings, however, is that after the first year, or after two years at the most, the shafting should be inspected and realigned.

Anti-Friction Bearings

"Have babbitt bearings been superseded by roller or ball bearings?" was a question invoking a large amount of comment. It was generally conceded that ball bearings are meeting with great favor and that for light work they produce excellent results, while for heavy work it is sometimes found necessary to use roller bearings. One member stated that in his mill they have changed beater bearings on the pickers to the ball-bearing type with excellent results. Another member, who said that he has also placed ball bearings on the picker beaters, has corrected a troublesome condition on the twisters by adopting this same type of bearing.

The chairman remarked that 90% of the shafting in his mill is on card drives with ring oiling and cast-iron boxes. The dust which is naturally in the card room, he said, settles on the boxes and, by capillary attraction, draws considerable oil from the boxes, with the result that over the week-end shut-down period there is more or less dripping of oil in the alleys. One of the members stated that it is his belief that this condition is due to poor oiling methods and can be corrected. It was brought out by several of those present that ball bearings result in a considerable saving of power, as, for example, on warpers, slashers, and other heavy equipment.

Difficulties formerly encountered in the application of ball bearings have been eliminated to a considerable extent by the use of case-hardened sleeves. Improper lubrication of spinning frames was said to result in oil running out of the bushings down the side of the pulley and onto the belt. This condition causes destruction of the belt and entails considerable expense. One member remarked in this connection that by the use of a brass bushing perforated with wood he has eliminated all difficulties caused by dripping of oil and has saved about 65% on belting.

One man asked whether ball-bearing spindles had proved worth while. In answer to this it was stated that a test showed that the installation of ball bearings reduced power consumption by approximately 50%. Manufacturers of ball-bearing spindles claim a 20 to 30% saving in power, and it was believed that this was a well-worth-while reduction of expense. On a visit to Georgia a short time ago, one master mechanic called on a mill which had put in some 12,000 roller-bearing spindles. This equipment had made it possible to increase the regular speed of the front roll from 130 to 150, with a corresponding increase in spindle speed when running on 21s or 22s yarn.

One member said that he would like to bring up a question regarding the front rolls of both roving and spinning frames. "You have all had the question of re-necking rolls brought up to you, and I should like to know if anybody has ever made any tests or established any limits on a loose neck? We always have calls to replace rolls which are running out, and I should like to know whether anyone has ever set any limit to the eccentricity of rolls allowable before they call for removal?"

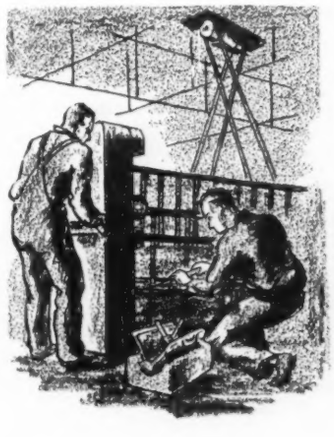
It was stated that tests made on yarn indicate that rolls can run out as high as 0.014 without any material effect on the yarn. Another member stated that if he were to establish a standard he would make it 0.005, and the chairman remarked that his mill has established the standard of 0.005 to 0.007. During this discussion it was brought out that, when screw-necked rolls have to be sent to be repaired, it is necessary to throw them away and replace them with square-necked rolls.

Group and Individual Drives

Considerable discussion was brought forth by the question: "Are group or individual drives to be preferred for driving machines, taking into consideration the power consumption, the cost of installation and maintenance, and the production obtained. It was shown that the difference in cost between the individual and the four-frame drive is great and that it is necessary to determine whether the extra production compensates for the increased cost. The consensus of opinion was that, with the many factors to be considered in this matter, a combination of various drives will give the best results and that judgment must be employed in deciding which is the better for any individual case. It was pointed out that it was formerly possible to carry from 25 to 50% overload on motors, but that today the rating plate of a motor signifies the load at which a motor is built to run.

The chairman said that in his mill they made it a practice to find the absolute limit to which a motor can be fused and, regardless of the amount of work which the loom demands of that motor up to its capacity, to fuse it to that limit. "In that way," he said, "with 4,000 looms, using some 12,000 fuses, our replacement on fuses during the week will average from 30 to 35. We fuse a ½-hp. motor at 5 amperes and a 3- to 4-hp. motor at 10 amperes. We have never had a motor burn out for lack of fuse protection and we do not know how much trouble in shut-downs we have saved by fusing to the limit. We have simplified the fuse job too; formerly, when the fuse blew, the loom stopped and the weaver called the electrical department for a man to replace it. Now when a fuse blows, the weaver is instructed to pull out all three of the fuses and put three new ones in. In that way we have cut down the time that the loom was stopped."

The last topic to be discussed was "How do you care for a saw-tooth roof to prevent leaks?" It is the practice in some plants to prevent leaks by steady patching and in others to make all repairs in the fall which are necessary to carry the roof through the winter. The point was brought up that it is absolutely necessary to insulate a concrete roof, and it is now customary to insulate wooden roofs to prevent condensation. Various types of insulating material were recommended, one member suggesting the use of a fairly good heavy cotton duck. Installation of hot-air heaters was also mentioned as a means of preventing condensation.



Tests Indicate High-Twist Tram Yields Superior Dull-Luster Hosiery

● Low-luster hosiery of good strength and elasticity can be knit from twenty-turn regular tram according to investigations conducted by the R. K. Laros Silk Co. and the Bethlehem Textile Co., Bethlehem, Penna. The accompanying article is abstracted from a bulletin issued recently by the technical laboratory of these companies, and the diagrams of thread constructions are reprinted by courtesy of the Read & Lovatt Mfg. Co.

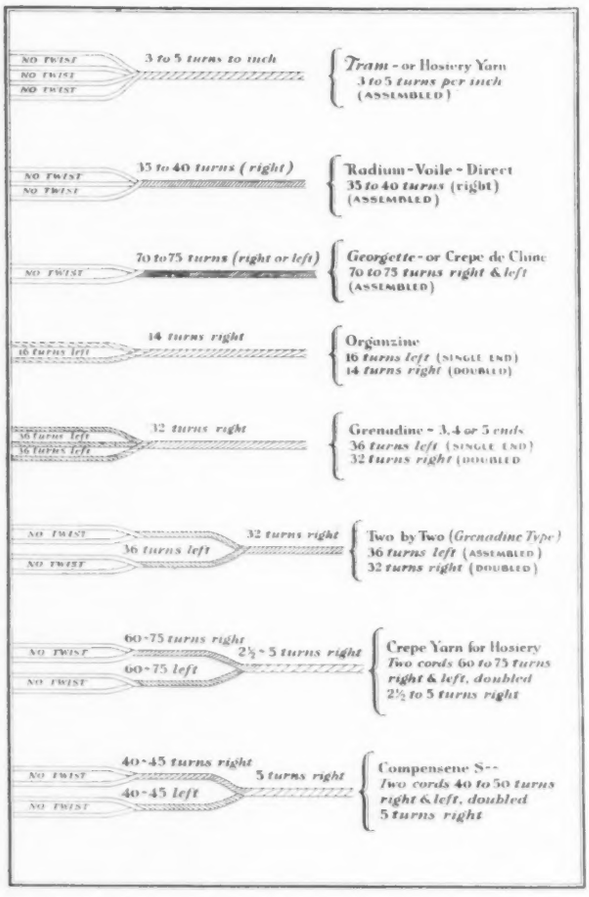
DURING the early spring of 1930, the announcement and appearance of dull hosiery, "with dullness permanently fabricated into the hose," attracted considerable attention. The so-called grenadine twist described in the Young patent, was made by giving each single end of silk a twist in one direction of 32 to 48 turns per inch. These ends were then all brought together and twisted in the opposite direction 28 to 44 turns per inch. Thus, to make four-thread grenadine 36/32, each of the four single ends were twisted separately 36 turns left, these four ends were then brought together and twisted 32 turns right. From the patent it was evident that the range of twists was from 32 to 48 on the single thread and 28 to 44 on the ply.

The application of this special-twist yarn to hosiery caused many manufacturers to develop similar twists but still not infringe on the Westcott patent rights. There soon appeared "two-by-two" grenadine, grenadine type of twists below 32/28, organzine twists, and low- and high-crepe type twists. A study of the accompanying twist diagram indicates the method of fabrication of these and various other thread compositions, some of which have of late been tried in hosiery making.

It was at first believed by hosiery men that with higher twists they could use a lower grade of silk in hosiery, or at least the same grade, and still get comparable effects and wearing qualities. To the contrary, it has been found that these high twists require an even higher grade of silk than was previously used in tram hosiery.

The outstandingly favorable result from the use of these higher twists is the dullness obtained in the stocking. A series of tests was undertaken to show effect of various twists and constructions on the ultimate strength and appearance of hosiery fabrics. Silk from one source and of the same quality was used throughout. The soaking treatment, winding, spinning, steaming, and coning for all twists were carried out at the same time and on the same machines. The fabricated thread was conditioned at the same time and run on the same day on the same full-fashioned machine by the same knitter. Dyeing and finishing for all samples was carried on at the same time and under the same conditions.

Some of the most important conclusions which resulted from these investigations may be summarized as follows: (1) Silk hosiery becomes duller as the yarn twist is increased or becomes more complex, to a practical limit at about twenty turns. (2) Silk hosiery strengthens slightly with increased twist up to approximately sixteen turns per inch. Beyond this point the fabric and the yarn lose strength and elasticity with further twisting. (3) Silk hosiery yarn shortens as the twist increases. (4) Reverse spinning takes out the original spinning, suggesting the doubtful value of the expensive high-twist, first-time spinning in grenadine and similar types of yarn. (5) At twenty turns regular tram spinning, there is, for all practical purposes, no creeping or twisting in the fabric; the deluster effect is approximately equal to the grenadine twist; and the fabric is stronger and more elastic.



Thread constructions used in hosiery manufacture

Arbitration

Long Used in Silk Trade, Spreads to Other Fields

GREATER recognition by the textile industries of the value of arbitration as a substitute for law-court litigation in settling commercial disputes has been an outstanding feature of recent months. The Silk Association of America, pioneer in the application of arbitration to solve textile controversies, has, however, used this method steadily and with increasing success since 1898.

The achievements of the silk industry in this direction persuaded other textile groups to extended use of the arbitration method with signal success. This is especially true of the woolen and cotton goods trades.

An outstanding development was the adoption of "American Wool Conciliation and Arbitration Rules" by the Wool Institute. These rules are based on the standards of the American Arbitration Association, with the unique provision that they provide for preliminary conciliation by a board of conciliators composed of not more than three members. A controversy may first be submitted to this board, and if terms offered by conciliators are not accepted by both parties within seven days, the matter then goes to arbitration.

The advantages of arbitration are rapidly becoming recognized by the woolen industry; since the adoption of the rules the industry has submitted cases to the wool industry tribunals administered by the American Arbitration Association involving amounts of from $100 to $150,000. All kinds of cases are submitted and they cover all kinds of disputes. The Wool Institute has urged all of its members to include a uniform arbitration clause in their sales contract forms, which resulted in the submission to arbitration of numerous disputes which otherwise would have probably gone through the slow and expensive process of civil court action. Increasing importance of style in fabrics, and the brief life allowed one given pattern makes arbitration a particularly desirable method of solving disputes in the textile trades, since court procedure is necessarily protracted and sometimes a court decision will not be forthcoming until the fabrics in question are out of style and almost unsalable.

Textile groups can go much further yet in applying the principles of arbitration, but their response to date is encouraging. Other divisions which are participating in the general work of the American Arbitration Association are: the importers' velvet group of the National Council of American Importers and Traders, the Textile Adjusters Association, the American Association of Felt and Straw Goods Importers, the Jute and Gunnies Importers Association, the American Fur Merchants Association, the Fur Brokers Association, the Shirting Fabrics Association, the National Association of Wool Manufacturers, and the National Upholstery Textile Association.

Attention particularly centers on the work being done in this direction in the cotton industry, under the auspices of The Cotton-Textile Institute; the cotton group in September formed a general arbitration council. Each organization in the industry may designate a representative as a member of the council.

This tendency toward broader use of the principles of arbitration is a happy augury for the textile industry. Perhaps no where can arbitration serve more valuable purposes than in textiles. It offers a quick, amicable and inexpensive way of adjusting commercial disputes. All proceedings are private; thus the element of publicity is avoided. Publicity during litigation can do serious harm to the reputations of the firms involved. For instance, a garment manufacturer refuses to accept the second half of a consignment of fabrics ordered from a weaver, claiming the fabric is inferior. The weaver brings civil action, with the result that there is much undesirable notoriety regarding the product of that company.

The personnel of the arbitrators is a vital question, and these men are selected by the American Arbitration Association with great care, when arbitrations are held under its rules. Men outstanding in their industries and whose integrity is unquestioned, are chosen and they serve without pay. The arbitrators almost always include men actually in the industry in question and are usually mutually agreed upon by both parties. But each party to a dispute may select one arbitrator and the two then choose the third, and all selections may be made from the panel maintained by the American Arbitration Association. About 20% of all cases submitted to the American Arbitration Association are textile cases.

All decisions of the Association arbitrators are enforceable in the courts. Sometimes decisions are appealed to the courts, but such cases may not be reviewed as to the merits. The New York State Court of Appeals has rendered an important decision concerning agreements to arbitrate. The court held that a party to a valid arbitration agreement, upon proper notice to the other party, may proceed with the arbitration to a valid award, even though the other party refuses to arbitrate, and that under certain specified circumstances a preliminary court order directing the objecting party to proceed was held unnecessary.

Arbitration offers the textile industry a method of settling difficulties amicably, speedily and economically. If the claim amounts to less than $1,000 each party pays $10 if there is only one hearing, and each pays $5 additional for each additional hearing. This ratio follows a graduated scale. If the claim amounts to between $1,000 and $10,000 the charge to each party is $25, and half this charge for each additional hearing; if over $10,000, the fee is $100. If the member of a trade association which is affiliated with the American Arbitration Association on a contributing basis is involved in the case there is no charge.

Single-Unit Full-Fashioned Hosiery

Must Not Sacrifice Existing Advantages

By M. C. Miller, M. E.
Mechanical Engineer, Manville, R. I.

Concluding article of series on knitting of full-fashioned hosiery on one machine; previous articles appeared Dec. 13, Jan. 3, and Jan. 31.

If, as it appears, we are on the verge of a mechanical revolution in full-fashioned hosiery manufacture, heed should be given to Mr. Miller's warning addressed to those who control the direction of progress in this field. The very existence of the full-fashioned hosiery industry, he points out, depends upon its maintaining a sufficient margin of superiority in the characteristics of its product over those of the circular-knitted stocking. Any extensive abandonment of this superiority will mean a decrease in the popularity of the stocking and an increase in the importance of the price factor, to the benefit of the circular stocking. Therefore the machine which is to make the full-fashioned hosiery of the future must be carefully selected, and any relinquishing of the important advantages of the full-fashioned structure must not be countenanced

A VERY early method of producing one-machine full-fashioned hosiery consists of knitting in place of the regular square or English heel, a round pouch-like seamless heel—sometimes known as the Griswold or Niantic heel. This type is regularly made in the production of seamless hosiery, but it is not nearly as desirable from the standpoint of fit, wear, or appearance as the square heel, such as is regularly used in full-fashioned hosiery.

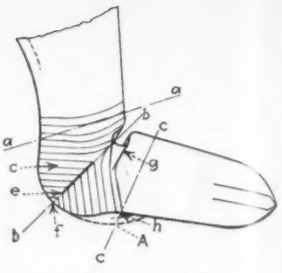


Fig. 29. Heel of seamless hosiery type

To produce this round seamless heel (an outline of which is shown in Fig. 29) on full-fashioned machinery, requires that the instep or central group of needles *a* be idled in a manner very similar to the modes described in previous articles of this series. The regular heel carriers knit courses *c*, which extend from the edge of the *a* or instep fabric to the last needle *b* (Fig. 30) that knits the outer edge of the ankle fabric. Succeeding courses do not knit, however, to the same needle, but to a needle one index outward from the needle to which the last course was knitted, as shown for instance in Fig. 30 by course *d*. In this figure is shown the heel as it would appear when knitted to line *b*, Fig. 29. In both Figs. 29 and 30 *e-f* shows the length of the last knitted course *b-b* in Fig. 29. The second half of the heel is knitted in the reverse order, commending with the short course *e-f* and thereafter knitting successively longer courses, as shown in Fig. 31, until the width *a* or instep fabric is again reached. This mode of knitting was disclosed in 1893 by Woodward.

Excess of Instep Fabric

The particular disadvantage of this type of heel, other than that it does not structurally resemble the regular full-fashioned heel, is that the foot portion cannot be knitted at enough of a right angle to the leg portion. Therefore when the stocking is later put to use and the foot fabric assumes a position about at right angles to the leg, an excess of fabric, such as is shown at *g* (Fig. 29), is formed. This excess is quite noticeable when the stocking is being worn. In other words, there is too much fabric from the instep to the toe on top of the foot and not enough fabric to go around the ball of the heel to the toe on the underside of the foot. This is well recognized in the seamless industry, and many attempts have been made to improve this heel structure, some of which are shown in Fig. 32. In all of them, it will be noticed, an attempt has been made to increase the length of the fabric on the under side of the heel and sole. Of course lengthening this portion of the foot would be equivalent to shortening the upper portion. All of these improved seamless-heel structures can of course be produced on full-fashioned machines in a somewhat similar manner to the plain round method just described, but none of them achieve their purpose nearly so well as the regular full-fashioned square heel.

In order that the foot after the heel may be wider than the ankle portion, heels of this type have been knitted in which the lower half of the pouch has been gradually widened, as shown by dotted line *A* in Fig. 31, thereby making possible the later foot narrowings *h* (Fig. 29) and also incidentally increasing slightly the amount of fabric in the under portion of the foot near the heel, which is of course desirable.

In producing all of these round or seamless heels, it

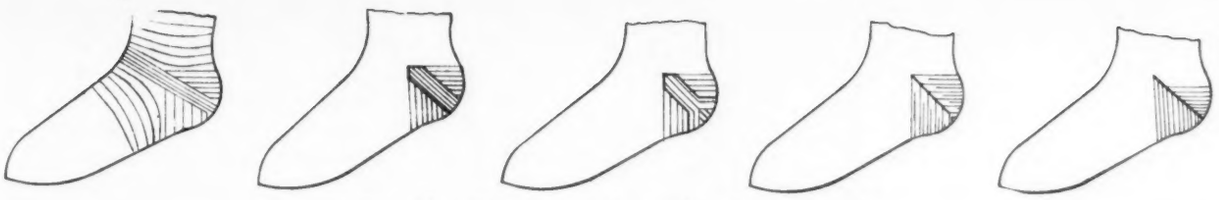


Fig. 32. Five types of seamless-hosiery heel

must be remembered that means must be provided not only for non-pressing the instep needles, but also for successively non-pressing the needles that are idled during the production of the heel pouches. While it would be possible to step gradually the outward press edges of the sinker head, outward and then inward, it would not be practical to do so in multiple-section full-fashioned hosiery machines, because the sections are placed too close together. There is so little space between the last needle of one section and the first needle of the next section that, if the pressing edges of each section were to be moved outward the required amount, they would interfere with each other.

Many constructions have been proposed to make possible the non-pressing of the instep needles and successive non-pressing of the adjoining needles. A recent patent describes the construction shown in Fig. 33, in which a drum 1, extending throughout the machine length, causes the jacks 2 to project the pressing edge sliders 3. There is one such slider for each needle. A spring 4 for each one of the jacks 2 is provided for withdrawing the pressing member 3, as determined by the drum 1. While it might be rather difficult to apply this construction to existing machinery, it is nevertheless a very desirable mechanical means for controlling the individual pressing of the needles.

In order to eliminate the necessity for non-pressing or otherwise idling any of the needles, many stocking structures have been proposed, an early construction being suggested by Herrmann in 1893.

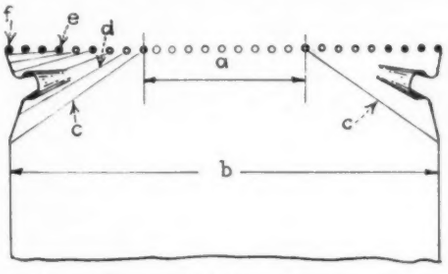


Fig. 30. Knitting successively shorter courses for seamless type of heel

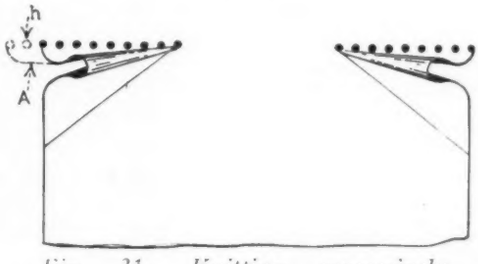


Fig. 31. Knitting successively longer courses

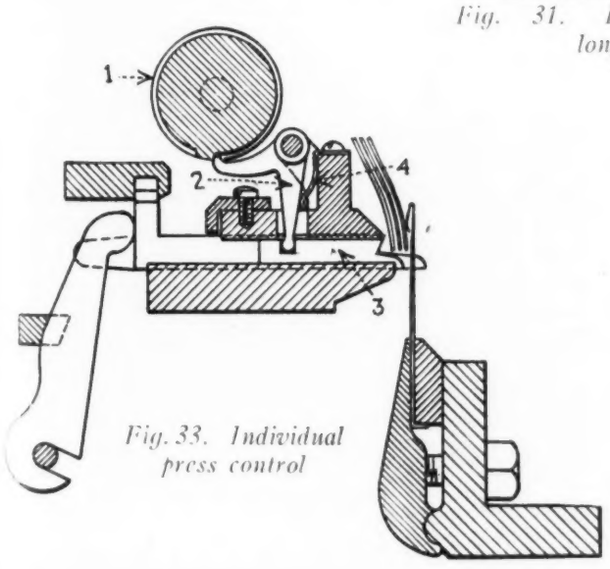


Fig. 33. Individual press control

This form is shown in Fig. 34 and is produced by knitting the heel fabrics *a* of preferably heavier yarn and having such fabric composed of very large and looser loops. This means that the loops composing the instep portion *b* are of relatively the same lengths as those of the preceding leg structure, while the *a* fabrics are composed of considerably longer loops. In this manner is formed, of course, relatively longer fabric at *c* than at *d*.

Why This Structure Is Inferior

During the knitting of the heel fabrics, the structure is widened at *e* and narrowed at *f*. This form is not at all desirable, as it produces entirely too much fabric at the instep. It makes an instep-fabric section of length *d* which is just so much more instep fabric than would be produced with the regular seamless-heel structure previously described, which is already too long at the instep. Furthermore, this Herrmann structure does not add so much sole fabric *c* as the ordinary seamless-heel structure. For these reasons, the Herrmann structure is, in my estimation, considerably inferior.

Another structure that has been used, and which was originally proposed by Thierfelder and Wieland in 1914, is shown in Fig. 35. In this structure the heel fabrics *a* are lifted outwardly by points, and during this widening the instep needles *b* continue knitting proportionately wider courses. As shown in this figure, the heel sections, after attaining the full width *c*, are narrowed inwardly to the desired foot width. Again we have a structure in which the foot is not formed at as near a right angle to the leg as in the present full-fashioned stocking. There is again too much fabric length over the instep and not enough around the ball of the heel and sole of the foot.

There have been numbers of structures with similar characteristics proposed, such as the one shown in Fig. 36; but all of them are lacking in sole length and other desirable full-fashioned features. As a specific instance, if we compare the structure shown in Fig. 36 with the regular full-fashioned structure, we find that the latter has the amount of sole fabric shown by the shaded portions *b* in excess of the amount of such fabric in the former.

Still other suggested structures take the form shown in Fig. 37, in which the knitting of the stocking commences at *a*, the heel narrowing being shown at *b*. This structure again is faulty in that it lacks sole length and has an excessive instep length. Its production is further complicated by the difficulty of producing a French toe

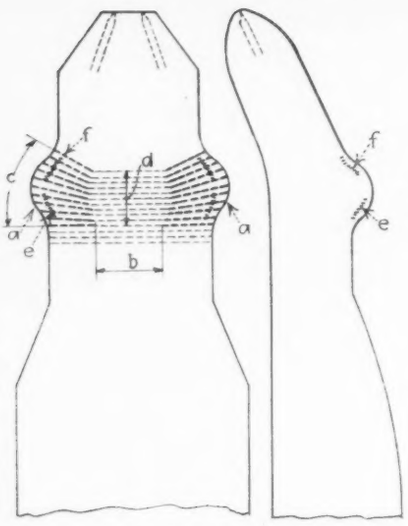


Fig. 34. Using larger and looser loop

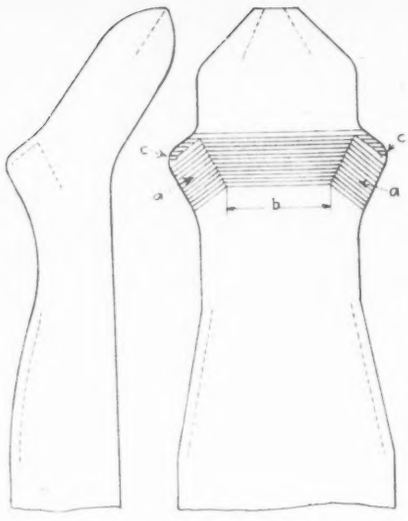


Fig. 36. Shortage of sole fabric

such as is used in full-fashioned stockings when it is desired to commence at the point of the toe instead of working toward it as at present. Commencing the knitting at the toe also precludes the possibility of knitting a finished turned welt, as it is necessary to commence knitting at the welt end if a finished welt juncture is desired.

In so far as the mechanical construction of any single machine for producing the complete foot and leg is concerned, it must also be remembered that two narrowing devices must be used, one to produce the regular leg and heel narrowings and the other the toe narrowings. In the design of a double narrowing machine, great care must be exercised to leave the needles and other elements accessible to the knitter. If widening is resorted to, it must be remembered that, in order to close the eyelet holes produced by widening, a widening filling-in point must be used to deposit a sinker bar of yarn from a preceding course to the empty needle. This latter hole-filling-point mechanism further complicates the narrowing machine.

Inferior Heel Should Be Rejected

I believe enough structures and mechanisms have been described in this series of four articles to show the state of the art. I could describe mechanisms that are being designed for this purpose, which have not as yet been made public, but I must refrain from doing so as the state of these developments is not such that the inventors and those interested care to have them generally known. I will say, however, that to date I have not seen or heard of a one-machine mechanism for producing stockings comparable to the regular full-fashioned structures; and I personally doubt whether a stocking, even in a very minor way differing from the accepted structure, would be acceptable to the trade in general.

It would be folly in my estimation for the manufacturers of full-fashioned hosiery to lessen the value of their product by accepting inferior heel structures, or in fact to accept any structure which does not at least have the merits of the present one. I do not believe it would be possible at this stage of the development of full-fashioned hosiery to produce an in-between type—that is, a structure having some of the features of a full-fashioned stocking combined with some of the features of a seamless or similar stocking—unless of course the resulting mongrel structure can be produced for practically seamless prices, so that it may compete directly with seamless stockings.

A very grave danger exists for full-fashioned hosiery producers if any number of them depart from the accepted full-fashioned stocking structure. Such a procedure would open the field for very active competition by seamless-hosiery producers, who might well be able to produce a mongrel fashioned structure—although they have not done so to date. I do not believe that it will ever be possible to produce an exact full-fashioned stocking on circular machines; but the full-fashioned manufacturers themselves should not lower the consumer's standards by educating her to a stocking having, let us say, a mongrel heel, later possibly eliminating the prominent leg narrowing, and using a seamless-knitted welt and also possibly some form of toe other than the present French diamond gusseted toe. To let down the rigid requirements of full-fashioned stocking structure, even in a relatively minor detail, might well bring about the eventual active competition of seamless-produced hosiery.

Price Not of Paramount Importance

I do not wish to infer that a seamless stocking is not a very desirable garment in its price class, as it most certainly has very desirable characteristics, but these characteristics are practically all valuable only as an aid to the manufacture of low-priced hosiery. Such factors alone should not in my estimation be considered by full-fashioned hosiery producers, if they wish to retain the field of high-quality *(continued on page 59)*

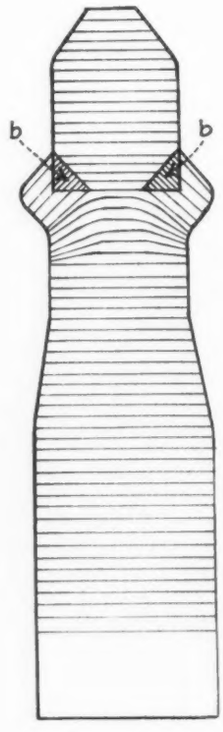


Fig. 35. Heel fabrics lifted outwardly

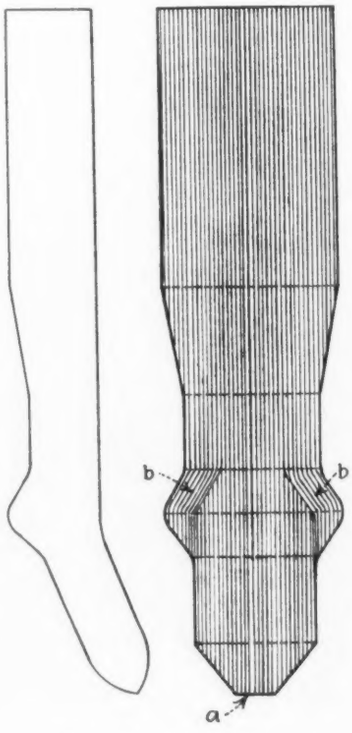


Fig. 37. Knitting commenced at toe

Effect of Reversing Direction of Flats on

Cotton Cards

By

Rob. Schaellibaum

It must be assumed that, when the revolving flats replaced the stationary flats of the cotton card, the direction of motion was chosen after a careful comparison of the two possibilities. Yet a study of the development of textile machinery shows that it is never wise to take too much for granted. The suggestion that the direction of motion of the revolving flats be reversed, made in the accompanying article, is not new. The question as to whether it has been given a fair trial is another matter. We cordially invite comments from our readers on Mr. Schaellibaum's proposal. Although we expect that his arguments can be refuted, a discussion is likely to bring out some interesting facts regarding the carding operation which will afford a better and more general understanding of the fundamentals of the process.

MANY years ago, when studying the cotton-carding operation, it occurred to me that the flats should come in clean over the doffer, where the cotton is to come out clean. As cards are now run, the first five flats at work above the licker-in receive most of the dirt from the cylinder, and go forward already well loaded, so that they cannot do thoroughly good work at the doffer end. Now it is well known that card clothing can do good work only as long as it is fairly clean; therefore it does not seem wise to load them with dirt almost at the start.

Some years ago I talked about this to a superintendent. At once he turned the belt running the flats on one card, and thus made them run the other way. Of course the experiment had to be stopped when all the flats on top of the card were dirty. But it could easily be seen that the sliver made during that time was decidedly cleaner and was strikingly more glossy, which means that the fibers had been straightened out much more and laid more parallel. The result of working with clean flats is that the fibers can enter between the wires of the flats. When the flats have at last been loaded, they go quickly out again to be cleaned.

About 40 years ago a firm of machine makers in France took out a patent to make cards in the manner I have suggested, with the flat stripper above the licker-in; and I had expected that at the expiration of the patent the idea would at once have been taken up by other makers of cards. Apparently this was not the case, however.

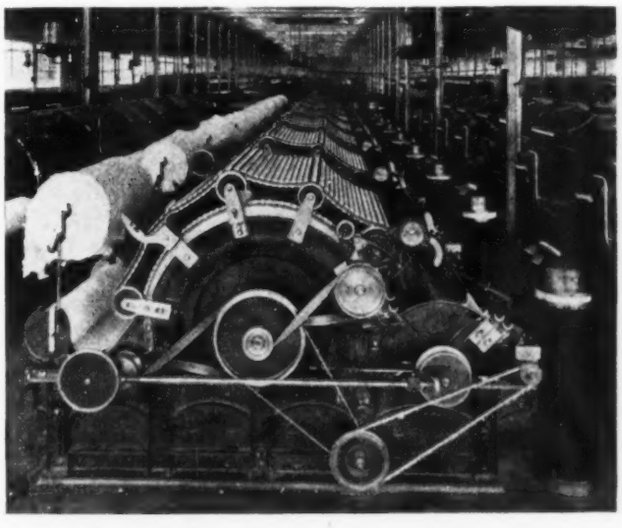
A few years ago I heard that an American card builder was trying to make such a card; but as far as I am aware, it was not introduced. Possibly it was found that the flat strips contained more cotton than the customers would want to see. But that is something that can easily be regulated. It is only necessary that the flats be run slower, and then the cylinder will take more fiber from them.

Many carders seem to think that the more cotton they waste in flat strips, the more cleaning they get; but this is not true. In one mill with which I am acquainted the cotton is put through only two beaters in the picker room and the flats on the cards are run so slow that the flat strips look actually like the motes from a finisher picker—and yet their 20s yarn is as clean as that of an average mill wasting 1% cotton in the flat strips.

Some years ago James A. Greer, Greenville, S. C., patented a device to be applied to cards with flats running the right way. He applied two carding rollers between the licker-in and the nearest flat above, the upper one taking up the waste from the flats, and the lower one turning it over to the licker-in, which throws out the dirt and turns the cotton over to the cylinder. With this device the flats can be run as fast as may be desired and still no cotton will be wasted, which would be especially desirable for heavy production. Of course the faster the flats run, the cleaner they will remain while at work. The writer happened to meet a man who was present at the trial run of the apparatus; and he said a lot of fly came out, which would of course be disagreeable to the people working about the cards. But that is certainly a defect easy to overcome by better covering about the licker-in. With this device, mills which do not care to make better goods could certainly make 20% more production on their cards without sacrificing quality.

Machine makers do not build machines for which there is no demand. Mills should study this problem and, if their investigations prove the value of my suggestion, should pass on their recommendations forcibly to the machinery builders.

The device is fully adjustable for the various sizes of rolls used in different mills, so that the rolls are raised the proper amount desired, (*continued on page 65*)



Is the present direction of the revolving flats indisputably the best of the two possibilities?

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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On Selection of Second-Hands

Editor, Overseers' Round-Table:

THE OVERSEER should select his second hand by all means. He is responsible for his department and knows best who is suited for the place. If the superintendent takes this authority from the overseer it might lead the second hand to believe that he is not under any obligations to carry out the overseer's instructions. It would also place the overseer in an embarrassing position as it would lead him to believe that the superintendent hasn't sufficient confidence in him.

What difference does it make to the superintendent who the second hand is, as long as the overseer gets results?

P. A. WYNN,
Overseer Carding, Mandeville Mills.

Editor, Overseers' Round-Table:

I THINK that the overseer should be allowed to pick his own second hand, because he is in a better position to know whom he can depend upon to cooperate and who is best qualified for the job. I think it is entirely out of the superintendent's place to pick second hands. However, I think that he should be consulted and given a chance to investigate the prospect before a final decision is made.

If the super is going to give all promotions, and the employes find it out, they are going to lose respect for the department head and begin "playing to the grand-stand." Every man has greater respect for the man who has the final word regarding his job, and without the respect of those in your department you cannot succeed. S. L. MAVITY.

Editor, Overseers' Round-Table:

I MOST heartily agree with Pete on the appointing of second hands. If both the super and overseer get together and "iron out" the proposition all parties concerned will be satisfied and, most likely, the best man will be chosen for the position.

There is no doubt that, if the super should choose the second hand, it would create an alibi for the overseer on the very first error to go through the department. Again, the overseer or the super alone is less liable to consider all angles of a man's ability and qualifications, if one should choose without consulting the other. They would be liable to pass up a good man because of a personal grievance or because a man's personality does not fit in with their own.

A. L. FRANCIS.

The Overseers Discuss

"WE ARE going to tackle a nice big problem today," Superintendent Chase grinned at the overseers, "and I expect that we will hardly have time to say all we want. But seriously, you fellows work in the mill and prosperity or lack of prosperity in the industry affects you greatly. Economists, executives and many others have all taken a hand in giving their explanations of what is wrong with the textile industry. Now I want to get the slant of you men who are so closely allied with production. What are your views on the textile industry?"

"I'm not as old as some of you younger sprouts try to kid me into believing," Bill drawled, "but I'm old enough, and it seems that ever since I can remember I've been hearing explanations of what is wrong with the industry. I think that one of the big troubles is that we are a bunch of calamity howlers. I've seen a mill president put on a long face and groan about conditions, and then end up the year with a neat profit. When things actually are fairly bad everyone spends so much time moaning and telling what is wrong that they haven't any energy left to trim expenses the way every other industry trims them in slow times. The textile industry spends too much time in worry and not enough in work."

"When you get right down to rock," Danny spoke up, "the trouble is in overproduction. There was so much gravy in the business in the old days that two mills rushed in where one was enough. Then the war came and you could run any junk mill and still make money. Far from being calamity howlers I think that the industry has suffered from a child-like faith; most believed that good times would go on forever, and when things got bad they just sat back and waited for the good old days to come back. What we need is less production and I think that the present moves on hours and night work are in the right direction."

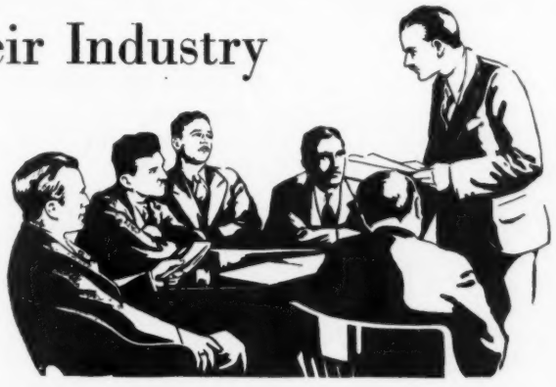
The Super's Instructions

Editor, Overseers' Round-Table:

SHOULD THE superintendent tell the overseer how to run the department? I'll say he should! Having held both jobs I think I should know. Especially when new work is to be run through the mill, I believe the super should give his overseer full particulars in writing so that he may be fully posted at all times. Doing so saves many mistakes.

Suppose that the finishing department report shows a certain style running off weight: Whether it is yarn or cloth the super must get busy right away. It may be in the carding, spinning, twisting, or weaving. It is reasonable to expect anything but definite orders from the super to the particular overseer responsible? At times particular orders

Their Industry



"If I can add my bit," Pete joined in, "I lay the troubles to poor merchandising. In the old days all a mill had to do was to produce and the selling took care of itself. As a result we have mostly production men in the industry and they haven't the ability to think clearly of selling and change with the times. If you have good merchandising you don't have to worry about overproduction. No one with a real knowledge of merchandising is going to run up excess stocks when he is constantly aware of the way they wreck his prices. It is the man who doesn't understand selling who overproduces."

"I can't help but get up," Joe chimed in, "and say that I think most of this talk is a lot of tripe. There is nothing particularly wrong with the textile industry. It is merely going through one of those cycles that every industry goes through. No business stays fine all the time and no business stays rotten. Things aren't as bad as they talk about and everything will work itself out O.K. Give more cheers and less raspberries."

◆

What do *you* think is the cause of the current condition of the textile industry?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

handed down by the super are not always clear, but any good overseer will put his full experience to work and everything works out O.K. in the end. W.D.C.

Editor, Overseers' Round-Table:

IN REGARD to the question of whether a superintendent should give full instructions for carrying out his orders. This should be taboo. The "Laws of Leadership" will teach you in what manner to give an order, or command, which will result in efficient obedience. It does not state how these orders are to be executed; that is for your immediate assistant, or next man, to reason out.

An episode from General Pershing's "Memoirs" will show the highest type of leadership. There was to be a celebration in Paris, July 4, 1918, and a wreath was to be placed upon the tomb of Lafayette. Believing that the A.E.F. should be represented, considering the importance of the time, Pershing deputized Colonel Stanton for the duty. When Colonel Stanton asked the General what he should say, Pershing replied, "You will be the best judge, and it will please me greatly if you acquit yourself with credit."

Stanton took his manuscript to Pershing and asked his approval. The General read it over carefully and said, "I would not change a word, Stanton, under any circumstances. It is splendid." Military leadership of this type might be applied to industry. "INCOGNITO."

Editor, Overseers' Round-Table:

THE SUPER should by no means try to run the departments. He should give full and complete instructions of what is wanted—preferably by standard instruction cards—but leave all details, such as settings, etc., to the foremen.

In order to keep in step with improving methods the super should consult his foremen frequently. When an experiment, or new idea, is to be tried out, it should, whenever possible, be done outside the particular department or plant—preferably by a consulting engineer if the expense is warranted—to avoid the danger resulting from a foreman being guided by over-fondness for certain rulings. F.A.R.

Delegating the Buying

Editor, Overseers' Round-Table:

IN THESE days when it is so difficult to keep a mill going I would first consider whether it would be proper to impose the extra overhead by having a buyer. If the mill is large and there is a buyer we must assume that the management has settled this question to its satisfaction, and expects the buyer's salary to be paid by eliminating waste time of other employees, and by a closer study of materials and prices. But if the overseers are high-class men—and they are—they know what they want and the buyer should keep them satisfied, thus promoting coordination. This coordination cannot be obtained by ignoring the men who make the mill business a success.

The buyer's attitude should be to find out what the overseer wants and then get it. If, from the buying angle, there be a good reason to buy something else, the buyer should let the overseer know why a substitution had been made.

The buyer has been hired to do the buying. For this reason the control of purchases is logically in his hands, but unless he uses common sense he can make himself an awful nuisance and create a lot of friction. S. M. PETERSON.

◆

Summary of Discussion on Superintendent's Orders

The question was whether the superintendent should give the overseer full instructions as to the manner of carrying out his orders, or whether such details as machine settings, etc., should be left to the overseer. About 20% of the contributions came out flatly against the super making any attempt to give the overseer instructions, and a few stated that the super, with responsibility for the finished product, should give full instructions. The majority of letters, however, held to the belief that cooperation should exist; that the main responsibility should rest with the overseer, but the super should make any suggestions he thought would help. It was pointed out that where something new was being tried the overseer should be particularly responsive to advice from the super.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Use of Penetrants in Hosiery Dyeing

Technical Editor:

You have from time to time advised in dyeing silk hosiery using a penetrant in the dye bath. What agent do you recommend and in what percentage? Do you think that an oil of any nature added to the dyebath is of any value where we have a fairly soft water that does not have any treatment other than city treatment?

We degum with Proctor & Gamble Zyrol, a soap with an olive-oil base. From its action I think it may contain a small percentage of trisodium-phosphate. We then extract, shake up, and enter the dyebath at the boil; run 15 min. and add salt; run 30 to 40 min., wash, and extract if on shade. We use Smith Drum Co. Pocket machines, and have a lot of trouble in keeping the machines clean with the boil-off oils that are more in use than soap for degumming. Can you recommend an agent for cleaning these machines? They are, of course, the Monel metal type. What agent do you recommend for stripping? Kindly give instructions for its use.

(7451)

Handling the several questions in the order in which they appear, we should say first that in the majority of cases water supply carries sufficient impurities and hardness to make the using of a penetrant in the dyebath advisable. This question should first be determined by having the water supply analyzed. While city water may be found to be highly satisfactory from a domestic standpoint or for drinking purposes, it may be highly unsatisfactory for dyeing and other textile processing. Where the city water supply is taken from flowing streams or from reservoirs, many different conditions of raw water will develop during the different seasons of the year, as influenced by rains, drought, vegetation, and falling of leaves, etc. Many city-water plants use lime as an alkali for neutralizing the raw water supply, and chrome alum is often used where the water supply is muddy, as a coagulating agent. These chemicals will be found in varying degrees in finished water, and their presence will have a serious effect on the dye formulas.

Therefore, the surest method of obtaining satisfactory water for dyeing is to re-treat the water for dyeing purposes. Even then, and with perfectly soft water, it does not necessarily follow that penetrants can be entirely eliminated, as the behavior of many dyestuffs is far more satisfactory when assisted by a penetrant. Therefore, we would say that the use of a penetrant is usually advisable. It will be necessary for you to experiment to find the penetrant best suited for your purpose and the necessary percentage to be used in actual practice. We are of the opinion that the difficulty encountered in keeping machines clean is due more largely to the condition of the water than anything else, and we believe that if the water is reduced to zero hardness, the trouble with dirty machines will disappear, regardless of whether soap or oil is used in the degumming process.

We are enclosing a list of penetrating agents, detergents, and strippers from which you will be able to select products best suited to your individual needs. The manufacturers of these products will be glad to give full directions for their use.

◆

Making Labels Stick with Mending Tissue

Technical Editor:

I am enclosing a sample of rubberized material which I have been endeavoring without success to get to stick to our labels. I am sending you also a sample of our finished piece. You will see that it does not stick fast to the labels. Can you help me out of my trouble?

(7426)

We had no difficulty in making these labels stick to the fabric by means of the rubber mending tissue, as shown in the samples we are returning to you. The label stuck to the piece of gray felt was treated by heating an ordinary flat iron hot enough to press a suit; that is to say, hot enough to sizzle when a wet finger was held against it momentarily. We then cut off as much of the loose filling ends from the back as we could. It was noticed that the rayon filling was very stiff and we believed that this size might prevent the two fabrics from joining.

We then ran the iron over the gray felt to warm it and to drive out any surface moisture which might be in the felt. We next cut a piece of the rubber tissue the size of the label, placed this on the felt where we were going to attach the label, put the label on top of the rubber tissue, and held the hot iron tightly pressed against the label for two minutes. This gave the bond of the label to the fabric, as you can see in the sample of the label joined to the gray felt.

The full-sized label fastened to the brown piece of overcoating was attached as follows: We left the partly stuck piece of rubber on the label, cut another piece of the mending tissue the same size as the label, warmed the piece of overcoating, placed the label with the mending tissue under it on top of the sample of overcoating, and held the hot iron pressed tightly to the label for two minutes. In other words, this latter sample differs from the first in that we did not cut off the loose floats of the filling on the back and that we used two layers of the tissue.

We checked the tissue by cutting out two pieces of felt, warming them as before, putting a piece of tissue between the two, and holding a hot iron on top of them for a couple of minutes. The result was entirely satisfactory.

We do not believe that it is advisable to join the tissue to the label and then attempt to attach the two—the label and the tissue—to the garment. A better way is to pack separately the label and a strip of tissue of the same size. The customer can place the label with a piece of the tissue beneath it over the place in the garment where it is intended to go, and hold the hot iron on top of the label and the garment. We also advise ironing that part of the garment where the label is to be attached before applying the label.

◆

Spots on Glove Silk

Technical Editor:

We enclose a piece of silk which is full of small spots. Please advise what, in your opinion, is the cause of these spots. *(7450)*

The spots on the sample have all the characteristics of having been caused by faulty and rusty needles. There is a possibility that the warp is being run on the machines in a damp state, thereby wetting the needles and causing them to rust when the machines are allowed to remain idle for a day or two. Then, upon commencing to run again, these rusted needles would perforate the cloth with just such marks.

There is one other place which comes to mind where the damage might occur. That is, the dressers may not be taking the necessary precautions in the finishing room. They might be carelessly trailing the pieces down over the pin-fasteners on the ends of the dressing frame. Or, if the goods are calendered, perhaps a thorough sanding of the rolls, with a good rubbing down and cleaning, will eliminate much of the trouble.

With more definite information we might possibly give a more informative reply. For instance: Does this trouble occur frequently or quite rarely? Does it appear after the machines have been stopped for a holiday or week-end? Are the pieces run through a calender? If so, just how hot is the calender?

◆

Stripping Dyestuffs From Weighted Silk

Technical Editor:

Will you kindly advise us, or put us in touch with parties who can advise us, if there is any process of extracting color from weighted silks so that they will still retain their weight, and may be redyed and finished successfully without leaving the material streaked and harsh. *(7443)*

If you attempt to strip the color from weighted silk by means of the zinc hydrosulfites and acid, there will be a loss of weight and irregularity in the weighting, so that a subsequent dyeing will be badly clouded and streaked. You may use powdered sodium hydrosulfite, such as is used for reducing vat dyes, with its own weight of soda ash at a temperature of not over 160° F. A light shade may only require ¼% each of

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

hydrosulfite and soda, while a full shade may need as much as 3%. The stripping rarely requires over 20 min. at a temperature of 140° F.; and there is no action on the tin-phosphate-silicate, so long as the bath remains alkaline. If the soda ash were not used, the hydrosulfite would oxidize and, at higher temperatures, would give rise to both sulfur dioxide and sulfides or colloidal sulfur, which would form a dark brown color with the tin of the weighting. This would render the goods unfit for redyeing. Where this discoloration has taken place by accident, it may be removed by treatment of the fabric in an alkaline bath of peroxide.

When the stripping is finished, the goods need only a wash with water, and all excess of alkaline hydrosulfite will oxidize in the air; this is in contrast with the acid-zinc-hydrosulfite stripping, which sometimes leaves a strong odor and a sufficient amount of reducing chemicals in the goods to interfere with redyeing. The method given above is used regularly for hosiery or for goods that suffer in texture by prolonged boiling.

◆

Finishing Sewing Thread

Technical Editor:

We are sending you, under separate cover, two part cones of No. 60 sewing thread, and would appreciate your advice as to the boil-out, bleach, and finish of threads similar to the thread on cone A.

Cone B you will note, is of same size and has practically the same color, but does not have the same feel. You will note the difference by pulling the thread between the ends of the forefinger and thumb. Cone A has a squeaky effect, and this is the finish that we should like to get on our threads. *(7438)*

Upon examining the two samples, we find that sample A has a greater percentage of paraffin wax penetrating into the fiber and on the surface, than has sample B. This produces the squeaky effect when the thread is passed through your fingers. This effect can be produced easily, but will not give you what you desire if you are looking for a slip finish on a high-speed flatlock machine. Judging from the size of the thread, this is what you desire.

First, you must have a good grade of 60s Sak. This should be boiled before bleaching, and the caustic soda should be cut down to as low a percentage as possible by using a good kier oil containing solvents. The goods should be washed off from the top of the kier, first using hot water and then cold water. The bleaching solution should consist of sodium hypochlorite made from liquid chlorine, and not chloride of lime which tends

cause harsh thread. Neutralize with bisulfite of soda. Do not use sulfuric acid, since this also will make the thread harsh and prevent its absorbing the paraffin wax. Finish the bleaching as usual, using olive-oil soap, but no soda.

Do not wash out the soap, enter the thread in 100-lb. lots in the bath at 180° F., made by boiling together in 6 gal. of water, 4 lb. paraffin (wax melting point 124° to 126° F.), 2 lb. coconut oil, 2 lb. commercial olive oil, ½ oz. bicarbonate of soda, and ½ oz. olive-oil soap. Add bluing to the bath, as desired. Work the thread in the bath ½ hour, extract, and dry at a temperature not more than 5° above or below the melting point of the wax. Wind with as loose tension as possible to obtain all the elasticity available. During the winding operation have the thread pass through a revolving wax-disk attachment, attached to your winder. Wind on large base cones with a closed, polished end. Use a light weight on top of the wax disk to hold the disk on the thread. This should give you the desired finish, provided the method of handling the thread during the bleaching process is properly taken care of.

◆

Effect of Ply Twist on Single Twist

Technical Editor:

Would you be kind enough to advise the writer whether or not, in making a two-ply yarn, wherein the twist in the single is reversed from the twist in the two-ply, the twist in the single is taken out in the plying to the same amount as the twist put in, in the two ply? For example, in a schiffli twist of rayon, where the twist in the single is 7½ turns right, and the twist in the two-ply is six turns left, what is the final twist in the single? Would the same conditions exist in cotton yarn as in rayon? (7445)

The question as to whether the twist in the single is taken out by a reverse ply twist of the same number of turns has been debated many times. On the basis of the following test, the answer appears to be in the affirmative. The following twists were taken on a two-ply cotton sewing thread:

	Ply Twist	Singles Twist
	23.75	22 17
	23.49	30 21
	23.92	24 20
	22.82	24 22
	23.41	29 23
Average	23.48	Average 23.2

As nearly as could be measured, there was no twist in the singles as it stood in the ply yarn.

To substantiate our theory, a cabled rayon sewing thread was tested. The following results were found:

	2nd Ply	1st Ply	1st Ply*
	2.27	15.00	13.00
	2.27	15.00	12.52
	2.25	15.18	12.18
	2.28	15.02	13.13
	2.23	15.15	12.70
Average	2.26	15.07	12.71

*Twist as it was in the ply.

The difference between the second ply and first ply is 12.81, which goes to show that our theory is true; that is, that the twist in a ply yarn when inserted in the reverse direction takes out a similar amount of twist in the single yarn.

Regarding specifically the second question, as to whether the conditions are the same in cotton yarn as in rayon yarn, we should say that the condition would probably prove more correct in rayon yarn because a rayon yarn is so much more uniform in diameter.

We should be glad to hear from readers who have studied this problem, outlining the results of their investigations.

◆

Finishing Sash Cord

Technical Editor:

I am enclosing herewith a sample of sash cord. Will you kindly give me a recipe for obtaining the particularly high luster noticeable in the sample? (4758)

An analysis of the sample of sash cord indicates that approximately 25% of its weight is made up of finishing compounds and materials. An ether extraction shows that the waxy and fatty matter is approximately 20%. About 75% of the fatty matter is unsaponifiable; and from its melting point and its appearance, we judge it to be a 124 to 125° melting point white paraffine wax. The other 25% has all the characteristics of being a tallow.

The iodine reaction indicates that there is a certain amount of dextrin which has acted as an adhesive and binding agent. The portion which was extracted after the ether extraction with hydrochloric acid shows the presence of silica, iron, aluminum, calcium, and carbonates. From this we conclude that a China clay has been used to make up the loading agent, rather than lithopone.

We believe that the tallow was a sulfonated tallow, or one rendered soluble by saponification or some other means. The whole coating material probably was applied from a water paste, rather than a mixture held together with some volatile solvent, such as benzine or gasoline.

Furthermore, we believe that the presence of these ingredients in the amounts mentioned would not be an indication of the amounts that went into the sizing mixture. We would hazard an opinion that 50 gal. of sizing material was probably composed of 20 lb. of dextrin, 5 lb. of sulfonated tallow, 15 lb. of paraffine wax and 10 lb. of China clay. These materials apparently were thoroughly cooked together and applied as hot as possible, because there was good penetration to the size coating.

◆

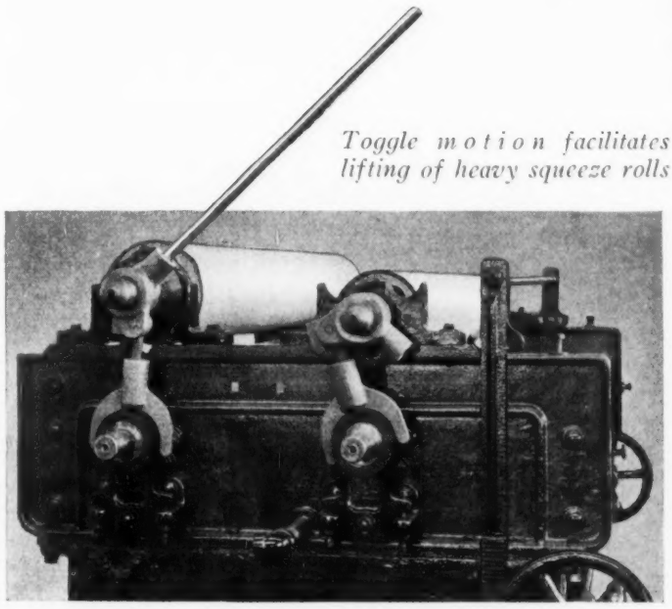
Streaks in Dyed Plush

Technical Editor:

We are enclosing herewith a small sample of plush which has a streaked appearance. Will you kindly examine this and advise us what in your opinion caused such streaks? The fabric is piece dyed. (7456)

It is our opinion that the streaks are caused by mixed pile yarn. Every lot of pile yarn received by the mill should be tested by weaving and dyeing about a yard of goods as a sample. In this way any difference in shade between two yarns can be noted. Even when yarn is bought from the same mill, two lots of yarn will often show decided differences in shade when dyed together.

New Machinery & Processes



Toggle motion facilitates lifting of heavy squeeze rolls

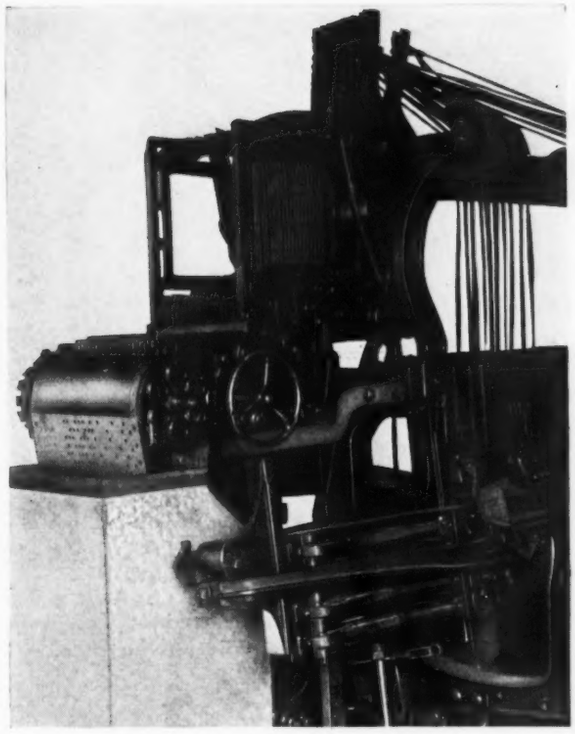
Toggle Motion for Slasher Squeeze Roll

LIFTING of heavy squeeze rolls on slashers is facilitated with a new toggle motion announced recently by Seco-Lowell Shops, 147 Milk St., Boston. This device not only enables one man to lift the heaviest of squeeze rolls with ease and rapidity when threading the warp, but reduces liability of damage to the machine or injury to the operator.

The toggle-joint members are attached on the size-roll bearing boxes and the squeeze roll shafts. They are held together by a link rod. In the accompanying illustration the right roll is shown in its normal operating position. The other is shown in the raised position, with the roll held at its highest point by a shoulder on the toggle section. This arrangement permits convenient threading of the warp ends. The leverage is operated by a powerful cam action. Any roll from 300 to 700 lb. in weight is lifted with the same facility.

Pattern Control for Dobby Looms

A PATTERN control for dobby looms which is designed to handle the pattern without the use of box chains, pattern chains, or multipliers has been developed recently by J. L. Reynolds and J. M. McKelvey, Charlotte, N. C. This machine will be manufactured for any size of dobby and will be marketed under the name Simplex Pattern Control by Ellis W. Henderson, Charlotte, N. C.

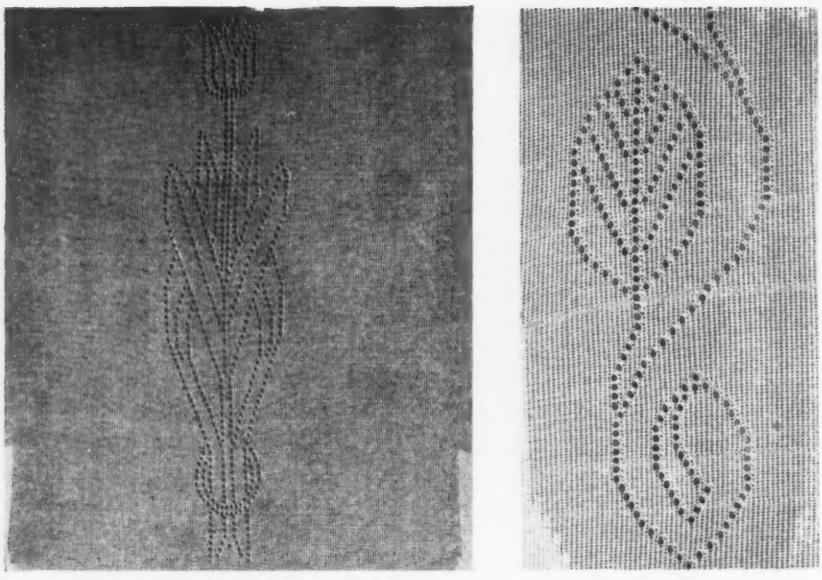


Pattern control for dobby looms suitable for patterns of any length

An advantage claimed for this new development is that any length of pattern may be handled without difficulty, thereby increasing the work which can be done with the dobby, and at the same time reducing the cost of changing from one pattern to another. The pattern control is provided with a series of fingers, operating under the dobby, which raises the dobby lever for indication as at present. The fingers are arranged over a cylinder, which moves with each pick of the loom, around which is the pattern material. This material is punched according to the draft, and made into an endless belt. Where indication is desired, the finger drops into a hole, thereby raising the dobby lever for the handling of the jack.

A special cotton fabric which, it is said, will last almost indefinitely and which may be taken off and used later if desired, is employed for the pattern material. Since the box motion is handled on the same pattern material, the loom and box cannot get out of time. The pattern belt folds into a can below the machine, taking up floor space only underneath the dobby, and permitting more space around the head of the loom. Since tall pattern chains, box chains, and multipliers are eliminated, the power requirement for operating the loom is reduced, and more light and space around the head of the loom are allowed.

Patterns are punched with a specially constructed machine, so that where more than one loom is on the same pattern, several drafts may be cut at the same time. The machine, being gear driven, is positive in action, thereby reducing the possibility of seconds, as well as increasing the production per loom. It is stated that while this machine will prove economical on short-pattern weaving, it is of particular interest to those mills operating on



Reduced Actual Size

Examples of designs made possible with new lace attachment for full-fashioned hosiery machine

long patterns or novelty work. The pattern may be changed in a few minutes, as once the machine is timed with the loom, it is only a matter of removing the pattern belt and putting on the new one. This change, in fact, can be made in less time than is required for the setting in of the warp.

Lace Attachment for Full-Fashioned Hosiery Machine

DR. ROBERT REINER, president of Robert Reiner, Inc., Weehawken, N. J., has recently announced the development of a Universal lace attachment which permits knitting of large lace designs on any Einsidel-Reiner or Seyfert & Donner high-speed full-fashioned hosiery machine. The attachment controls 45, 54, or 108 needles, or the entire bar, so that all-over lace effects, frontal and lateral clocks, or different designs knit simultaneously in different positions on the hose can be obtained. Since the attachment can be stepped in any direction, intricate and delicate patterns are procured which are said to surpass in appearance the finest imported lace inserts.

Treatment of Rayon, Silk, and Mixtures

SCOURING and bleaching, or scouring, bleaching, and dyeing of rayon or silk in one operation, is made possible with a new product introduced recently by the Surpass Chemical Co., Albany, N. Y. This material, which is marketed under the name of Surpalite, is recommended especially for use in processing of rayon and silk piece goods, as well as mixture fabrics. The manufacturers state that since degumming, bleaching, and dyeing are performed without intermediate handling, the entire operation can be accomplished from start to finish in less than two hours. The same method is applicable for two- and three-fiber hosiery, permitting degumming, bleaching, and dyeing of any shade in one hour.

In treating piece goods, the fabric is loaded into a reel dyeing machine, and the entire operation takes place in one bath, no handling being necessary until the goods are ready to be unloaded for the extractor. Through the elimination of in-between rinses and prolonged use of steam, this procedure enables a material saving in time, handling, and water.

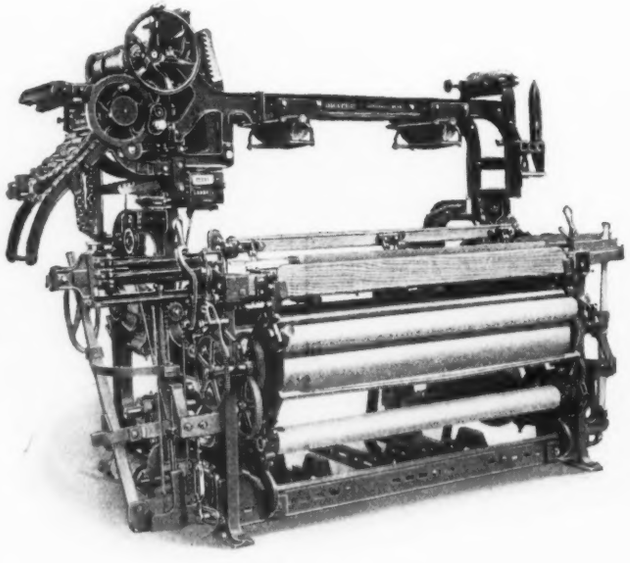
The Surpalite method is also said to produce clean, soft fabrics, which, due to the minimum time consumed in the processing and handling, retain their tensile strength and luster. In addition, the simplicity of the operation and the savings in time and labor are expected to result in a substantial reduction in cost.

Silk Loom

DEVELOPMENT of a new silk loom designed for making heavy weaves has been announced recently by Draper Corp., Hopedale, Mass. This loom, known as S-5 model, is of heavier construction than the S-4 model described in the Nov. 30, 1929, issue of TEXTILE WORLD, and is $3\frac{3}{4}$ in. deeper, thus affording $2\frac{7}{8}$ in. more harness space. Since greater depth gives more warp stretch, this feature is of value to mills making heavy weaves, where additional harness space is not necessary.

In the accompanying illustration, the loom is shown with a twenty-harness Crompton & Knowles intermediate drop-box head, a No. 3 take-up with removable cloth roll, and helical gears on the driving end of the take-up; 2x1 box motion operated from the box section of the head; motor drive; heavy crank shaft; batwing pick motion; two Hyatt roller bearings each on cam, crank, and rocker shafts; and No. 1 center-fork filling motion with side adjustment.

This model is also built with Crompton & Knowles dobbies up to 25 harness capacity or with twelve harness cone motion, fixed cloth roll, either plain bearings or

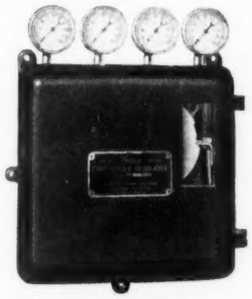


Silk loom for making heavy weaves

six to nine Hyatt roller bearings, feeler, warp stop motion, selvage motion, and fixed or movable reed. It is furnished with either friction or automatic let-off. The latter type is positively driven and will deliver uniform tension from full to empty beam without adjustment.

Time-Cycle Regulator Controls Duration of Operations

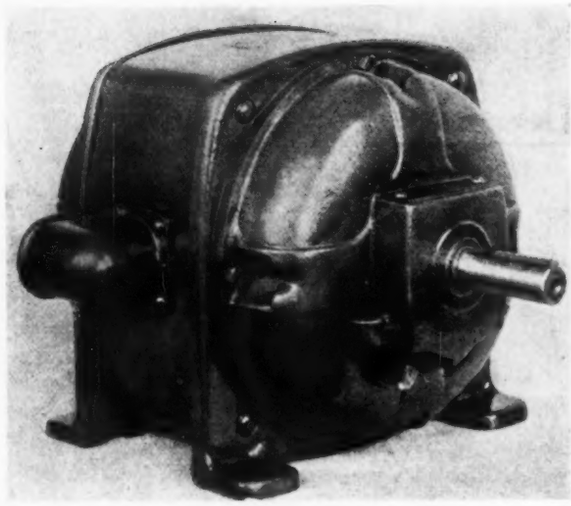
CONTROL of the duration of operations in prescribed sequence where such operations can be started and stopped by means of an electrical or fluid operated device is made possible with the Tycos time-cycle regulator introduced recently by Taylor Instrument Cos., Rochester, N. Y. The instrument is designed for controlling the duration and sequence of operations actuated by steam, water, gas, electricity, or compressed air, and is expected to find wide application in the textile industry. Its operation is independent of temperature or pressure in the apparatus being controlled, although it can be arranged to operate in conjunction with such conditions.



Time-cycle regulator

The regulator consists of an electrically driven cam which, as it revolves, progressively opens or closes small pilot valves. These valves in turn regulate a supply of compressed air to diaphragm valves, electro-pneumatic switches, or other pneumatically operated devices as may be necessary according to the requirements of the individual applications. The cam is mounted on a camshaft which rotates in ball bearings. Steps are cut on the cam corresponding to the number of pilot air valves to be operated. Practically any total revolution of cam can be supplied. Cam speed can be increased or decreased by the user of the device to meet new requirements of the process by substituting new cams and gears.

Unit humidifier of simple design



Single-phase motor capable of frequent reversal

Single-Phase, Repulsion Induction Motors

SINGLE-PHASE, repulsion induction motors, designated Type SCA, and capable of very frequent reversal, are announced by General Electric Co., Schenectady, N. Y. These motors have the same appearance as the General Electric SCR general-purpose, single-phase motors, and are mechanically interchangeable in all respects with corresponding horsepower and speed ratings of that type.

Available ratings range from ¾ to 5 hp. at 1,800 r.p.m. and from ½ to 2 hp. at 1,200 r.p.m. All mechanical modifications which may be applied to the general-purpose SCR motors are equally applicable to the new Type SCA. The starting torque is said to range from 225 to 275% of normal full-load running torque, depending on the rating. The control for the new motor is simple, consisting only of a full-voltage, three-pole, reversing switch, which may be either manual or magnetic.

Humidifying Unit

THE Standard Engineering Works, Pawtucket, R. I., has placed on the market a "Junior" humidifying unit which is designed for application where larger units are not suitable. A simple connection to water supply and drain is all that is necessary for installation. Fine atomization of water, similar to central-station units, and which can be extended to an adjacent room, is a feature of the humidifier.

Particular applications of the unit are said to be in textile laboratories, conditioning rooms, silk-storage vaults, yarn storage rooms, and similar places. A wall bracket is furnished with each unit. A humidity control, which is stated to be accurate within 2% relative humidity, is a part of the installation. Capacity is 1 gal. per hour with 150-watt load. The unit is 14 in. in diameter, with a 24-in. head and a net weight of 41 lb.

Durene

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AND COLORED

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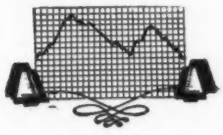
SURVEY OF FABRIC, KNIT GOODS, YARN AND RAW MATERIALS MARKET



Irregular "Testing Period" Ahead of Raw Silk

By Dr. L. H. Haney

AS in a good many commodities, the silk market fits the theory that prices hit a "primary" bottom last fall, then "rallied," and have recently undergone a "secondary" decline. This is a frequent phenomenon in speculative markets.

Usually the secondary decline carries prices close to the primary bottom, and there is a "testing" period. If the market holds at or above the preceding low level, there is good evidence that the declining trend has been checked and that at least stabilization has been effected.

While it may be admittted that there is some doubt concerning silk values, on account of large stocks "in custody" in Japan and the backwardness of general business in this country (to say nothing of the glutted hosiery market), we are hopeful that the worst was probably discounted at the bottom reached last Fall. If this be true, the silk market is not likely to react much further, but to undergo a period of irregularity in the next few months, during which world supplies will be gradually reduced to less burdensome proportions and silk prices gradually become firmer. Meanwhile, however we see no reason for any sustained advance.

Statistical Position

January imports decreased substantially from December, but were the largest for the month in any recent year except 1929. Stocks at New York also decreased, though remaining comfortable, and at 93% of current deliveries they may be called ample.

From the fact that stocks decreased while imports remained fairly large, one might infer that "deliveries" held up well. The Silk Association's estimate of 55,910 bales withdrawn from storage in January was actually a few hundred bales larger than in December. Except for January 1930, it was probably the largest quantity on record for the first month of the calendar year.

As indications favorable to strength in the statistical position, we can say that imports were relatively low in proportion to deliveries, being well below average in that respect. This suggests no tendency toward an accumulation of stocks here. Moreover, the existing stocks are below the average of recent years as compared with deliveries.

Yet the figures were not received with enthusiasm, largely because the deliveries were appreciably less than most of the advance estimates. Rarely do deliveries fail to make a much larger gain in January, and in most recent years the January figure has exceeded the preceding fall peak. This makes it appear that the expansion in manufacturing activity last October was excessive and partly responsible for an enforced let-down at the turn of the year. It tends to confirm our impression that production was pushed too rapidly in the September-November period and that the record October deliveries were excessive.

Be that as it may, conditions are now in the way of quieting down and correcting themselves. Certainly stocks in domestic warehouses are not excessive and imports are not often so low in comparison with deliveries at this season.

The world visible supply resumed its decrease in January, at the end of which month the total was 229,000 bales, against 237,000 bales at the beginning of the year. Though the decrease must seem disappointingly slow, this is a step in the right direction. But it compares with only 161,000 bales a year ago. The chief weakness in the statistical position of raw silk is to be found in Japan. The 112,000 bales in Japanese warehouses will not come out of the figures. The so-called "free stocks" are somewhat reduced, but if the late run-up in the silk market was caused by that fact, what would happen if any considerable part of the silk in custody were returned to the "free" storage?

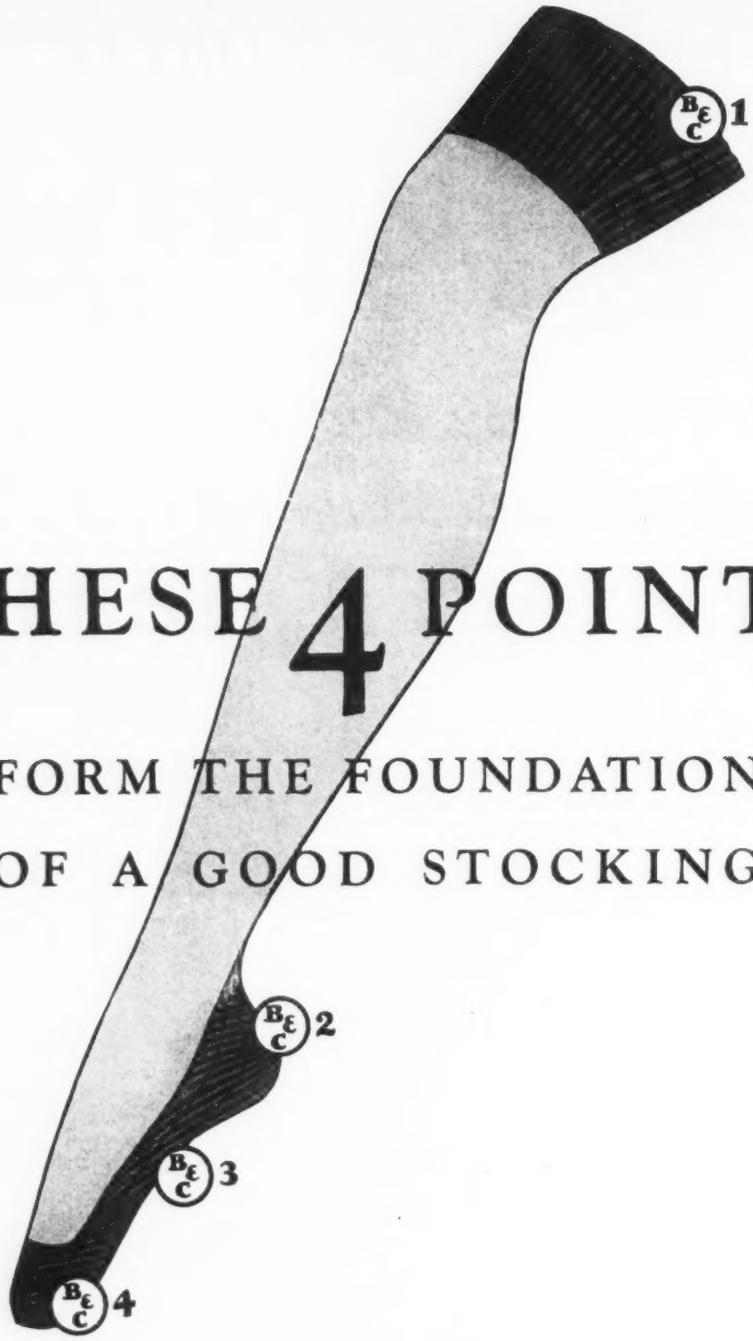
The action of the market confirms the opinion that $2.90 for Cracks XX is plenty high enough, and that there is no reason to expect that it will be necessary to pay more than that for several months.

Our usual comparison of the combined stocks at New York and Yokohama with the domestic machinery activity shows a lack of improvement in December. The trend of the stocks ceased to be downward, while there was a definite setback in manufacturing. The average stocks for the three months ending with January were practically unchanged from the average for the three months ended with December, or about 202% of the average for representative recent years. Domestic machinery activity, however, was only about average. Should the Japanese curtailment of production not be as effective as hoped and stocks not show the usual seasonal decline between January and May, the pressure on the market might become severe again.

The only safe conclusion is that the

Summary: **The silk market is undergoing a "secondary reaction," following a natural but overdone recovery. Conditions are not yet right for any sustained advance. An irregular testing period probably lies ahead. The old low level does not seem likely to be broken, but purchases should be made only on recessions.**

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.



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market is under the influence of artificial and uncertain forces. There is a good possibility that it may fall back to the old low level. There seems to be no reason for prices above $2.90. The moral is, buy only as required, leaning toward more liberal purchases under $2.70 and withdrawing whenever the market approaches $3.00.

Favorable Factors

1. The "free" stocks of raw silk in Japan continued to decrease in January.
2. Reeling in Japan is to be suspended in March in order to facilitate liquidation of the syndicate holdings.
3. The total visible supply of raw silk declined in January.
4. Stocks of raw silk at New York declined last month and were moderate in comparison with deliveries; scarcity of certain grades of raw silk for prompt delivery is reported in this country.
5. Total stocks of raw silk at New York and Yokohama have declined more than seasonally since last summer, and the maladjustment between the indexes of stocks and activity of domestic machinery has been reduced.
6. Imports of raw silk into the United States have been low for several months when compared to deliveries to mills.
7. The volume of wholesale silk sales at New York in December was above that in the same month of 1929 or 1928.
8. The quantity of silk goods in stock at New York at the beginning of the year was below the corresponding stocks of the past two years.
9. Department store sales held up fairly well in January and retail trade in general made a fairly good showing.
10. Raw silk is relatively cheaper than wool or cotton and is below its average relationship with the general price level.

Unfavorable Factors

1. The National Raw Silk Exchange reports January world production again in excess of consumption.
2. The receipts from filatures in January were nearly twice as large as a year ago.
3. The supply of raw silk is easy, and a large carryover of raw silk and cocoons is likely.
4. The usual suspensions of reeling in the first two months of the year will probably be postponed until March.
5. The cost of Chinese silk is lower due to the drastic declines in silver.
6. Deliveries of raw silk to mills in January increased less than usual. The ratio of the index of deliveries to the index of spindles in December was near peak levels, which fact suggests that most *mills are in an easy position as to supplies of raw silk.*
7. Loom activity and spindle activity indexes began to decline in December; reported dumping of broad silks confirms the existence of some overproduction.
8. Thrown silk weakened in price late in January.
9. Hosiery production is still small; stocks large; the strike may further decrease raw silk consumption.

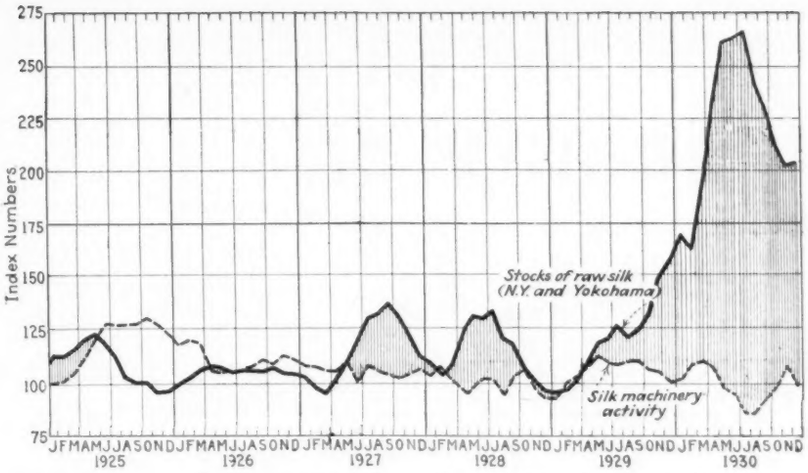
Index Numbers
275
250
225
200
175
150
125
100
75
Stocks of raw silk (N.Y. and Yokohama)
Silk machinery activity
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1925
1926
1927
1928
1929
1930

Fig. 1. RAW SILK STOCKS AND MACHINERY ACTIVITY. Stocks—N. Y. and Yokohama, adjusted for seasonal variation, three month moving average; N. Y. Stocks, Silk Association; Yokohama Stocks, H. L. Gwalter & Co. Machinery Activity—Composite of spindles and looms adjusted for seasonal variation, Silk Association. Average 1923-1927 = 100 for both indexes.

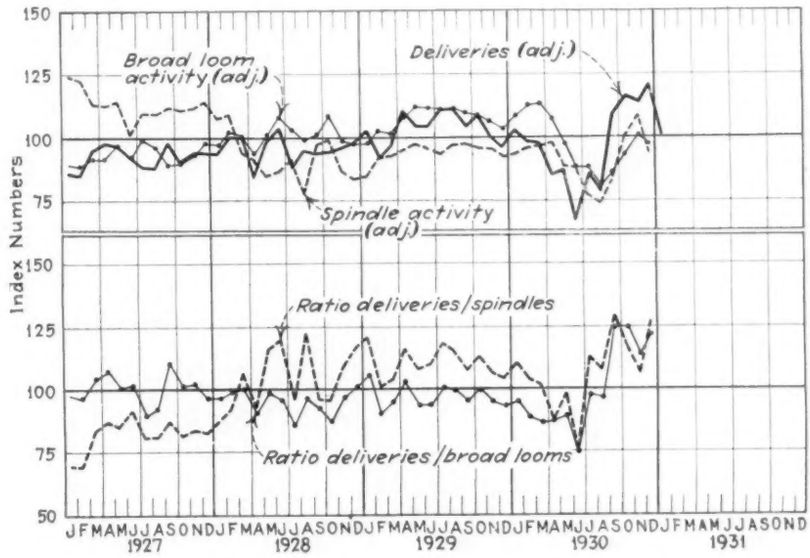
Index Numbers
150
125
100
75
Broad loom activity (adj.)
Deliveries (adj.)
Spindle activity (adj.)
Ratio deliveries/spindles
Ratio deliveries/broad looms
50
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1927
1928
1929
1930
1931

Fig. 2. INDICATED SILK CONSUMPTION. Deliveries—bales; Spindle Activity, Broad Loom Activity—per cent of normal machine hours operated. All three indexes adjusted for seasonal variation. Ratio of Deliveries to Spindles and Ratio of Deliveries to Broad Looms based on above indexes. Average of 1927-1929 = 100 for all indexes. Source: Silk Association of America.

10. The value of wholesale silk sales at New York in December declined again and was low in comparison with machinery activity.
11. The price advance in December and January makes raw silk dearer as compared with rayon.
12. General business continues depressed and consumer purchasing power remains at a low level.

Analysis of Factors

An analysis of the foregoing factors indicates that the reduction of stocks in this country and the decline in the "free" stocks in Japan have been the chief factors in market strength. The relatively low level of imports may indicate a stronger domestic supply situation, but there is some probability that the rise in raw silk prices in late 1930 and early 1931 was partly responsible. Total supplies are still burdensome and the Japanese Syndicate could not liquidate without weakening the market. Moreover, the increased activity in silk manufacture during the last quarter of 1930 was running counter to the trend of general business, and could not be long sustained at so high a rate. With purchasing power what it is, not much can be expected from the goods markets for some time. About the most that can be said is that the suspension of reeling in March may hold raw prices fairly firm and enable the Syndicate to liquidate part of its holdings.

In the absence of larger consumer buying and stronger goods markets, higher silk prices do not seem justifiable, as they reduce margins and tend to necessitate more drastic curtailment of manufacturing.

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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Cotton Goods Make Gains

COTTON goods are in good demand and prices are firm at ⅛ to ¼c. above the low point reached three weeks ago. Print cloths are the market leaders and selling in larger volume than at any time this year and more actively than any time since last fall with many firms. One of the large selling organizations states it is selling this month about one-third more than last month, and about 60% more than in the same month last year.

One of the most encouraging features of trading is that other cotton goods, aside from print cloths, are moving in larger volume, sheets and pillow cases, fine and fancy goods being in more active demand than at any time within recent months. A number of the large selling houses are not forcing sales at present prices, but are holding their goods for higher figures which they believe are not far ahead.

Mill Position Difficult

Although demand is expanding and prices are hardening conditions in the print cloth section leave much to be desired from the mill standpoint. It must be recalled at this time when much discussion concerning curtailment and reduced stocks is occupying the center of the stage, that manufacturers in most instances are running only about half time as compared with their former production rate and many operating in the day time only are running part time on that shift.

It is these manufacturers who look into the future with some misgiving. They see themselves in a position of "holding the bag" for those manufacturers who for a number of reasons refuse to come into the group that has decided that night runs should be discontinued so far as possible.

Night Runners Quote Low

The mill that runs two shifts a day is able to undersell the manufacturer who is operating day-run only due to the lower overhead, and the mills that are curtailing are only able to sell when the night-run group has booked all the business it can handle. For example, much of the price cutting within the last two months, which has been discussed so widely as poor merchandising, has been blamed on the night-run units.

One seller expressed the opinion that if these night-run low sellers did not stop this practice in the near future, the curtailment program of the print cloth division would be in danger of failing to achieve its purpose.

Market Briefs

Cotton: *Steady market with evidence of broader support.*

Cotton Yarns: *Firmer, with improved demand.*

Cotton Goods: *Stronger tone; print cloths active.*

Wool: *Broader sales, firmer prices, but undertone of uncertainty.*

Wool Yarns: *Firmer; buying light and steady.*

Wool Fabrics: *Spot merchandise moving well.*

Silk: *Quieter; prices tend to stability.*

Silk Yarns: *Thrown yarn prices weak, demand light. Spun yarns steady; fair call.*

Silk Fabrics: *Good turnover; early price break looked for.*

Rayon: *Active buying, mostly in 150 deniers.*

Knit Goods: *Hosiery improves; spring underwear more active; outerwear holds its own.*

◆Wool Goods Stocks Depleted

SEASONAL activity in men's wear and dress goods continues, sellers being pressed for fabrics which they are unable to locate either in their own warehouses or at the mill. Buyers are placing business with men's wear firms that will not be delivered for six weeks. One of the larger firms handling fabrics of this type states that their stock is practically non-existent.

Yet it must not be assumed that the position of manufacturers has been fundamentally changed since the first of the year when activity became noticeable. This business is being crowded into a short space of time and the volume will be no larger than seasonally should happen.

In dress goods the condition is the same as in men's wear, buyers being unable to locate stocks of merchandise in sellers' or in mill hands but must wait for delivery from the manufacturer and yet goods must be made and delivered in time for the spring consumer season. Crepes and chonga type fabrics are the ones in most active request, in the low and high priced fields.

The men's wear trade is selling in many instances on the basis of prices that will be named in the next few weeks on the next season's goods. For example, if a concern sells a lightweight fabric it will bill the buyer with the understanding that the price will not be higher than it will name for similar heavyweight fabrics.

Thus many firms are selling men's wear lines for the present season on the price basis of next. Not all have followed this policy, but the majority have and to many it seems strange that when buyers are pressing for goods not available that sellers are willing to accommodate them with lowest prices that will probably be witnessed in the goods markets over a long term.

◆Broadsilk Prices May Break Early

THE broadsilk market is steady, and fabric manufacturers are enjoying a good turnover, chiefly on printed flat crepes. There are plenty of piece goods buyers in the New York market, thanks to the recent National Retail Dry Goods Association convention, and these factors show interest in a wide range of crepes. Space designs and plaids are favored, as well as Paisley patterns; polka dots are coming forward sharply and promise to be a good seller; the call is mainly for the larger dots, widely spaced, and color preferences include black-and-whites and other combinations, among them browns and greens; blues of course, continue to lead. Retailers pay increasing attention to chiffons and there is promise of a lively season.

Cutters place substantial quantities of business, mostly for nearby shipment; the low-priced chiffons are in spirited call for dress manufacture. Printed florals in large designs are preferred. In the higher qualities, gray, navy and white are important. The garment trades also cover actively on flat crepes and cantons, and the orders though small individually aggregate a pleasing total. Leading fabric houses report that total sales since fall equal or exceed last year; total sales since Jan. 1 are slightly behind last year.

While cutters show confidence at the moment, and are expected to continue steady buying for some weeks, there are indications that current season prices may break earlier than usual. Those holding this view argue that the present confidence is not deep-rooted, and that the garment trade as a whole has not fully recovered from the depression. These factors believe that the first real sign of sales decline will precipitate a general weakness and rush to clear. Some mills are anticipating such a development and have already ceased production of current season lines. The market generally is in a good position, and if output is watched carefully, the force of the break could be modified.

Production leans chiefly to summer crepes and chiffons, and the large mills are slow about manufacturing in anticipation. Stocks generally are low, and the weavers are trying to keep them down.

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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Steady Swimsuit Call; Spring Sweaters Gain

DEMAND for bathing-suits is steady, though somewhat lighter than in January; and deliveries are gradually picking up. Actual contracts seem to be slightly behind this time last year, but the difference is not serious enough to cause worry. Most of the mills booked a big part of their season's business in the last months of 1930 and are in a satisfactory position. Spring sweaters are selling and in some instances, the call is spirited. All these orders are small, however, and the season is decidedly behind normal; it seems unlikely that late buying will bring spring sweater total up to that of last year. Fall heavyweight sweaters are picking up slowly.

Bathing-suit prices hold firm, and the market does not look for weakness at any end through the spring season. Style preference in buying women's suits continues to emphasize bright contrasts, but there is less interest in jazzy effects; it is significant the pastels are becoming more important, both in mixed patterns and in solid colors. There is also a good call for women's suits in dark shades.

◆Spring Underwear Lines Active

SPRING underwear business, while late in starting, is now picking up fast and most of the principal mills did a spirited business during the last week. The call was divided among cotton athletic shirts and shorts and rayon lines, with the cotton garments predominating. Mill agents are much encouraged by the improvement and they look for a good spring season; some optimistic factors believe that the rush of buying may make up for the late start, though that is open to doubt. However, jobbers and retailers show increased confidence; spring underwear prices are firmer, and some good-sized orders are being placed. Market tone is better, and knitters look for a steady call through March. The important point is that stocks in hands of retailers are very low, and they are compelled to buy for immediate demand.

Heavyweight lines for fall are picking up slowly; most of the mills now have announced their 1931 prices, but distributor interest is still limited to sampling. Actual sales of heavyweights have been light, and no substantial buying is expected for some weeks. The sharp increase in call for spring goods has encouraged heavyweight producers to look for improvement at their own end about the middle of March.

Production of heavyweight underwear samples for fall is still going ahead. There is some uncertainty as yet regarding operating schedules for late spring. Manufacturers say it is too early to set any definite policy, but it seems probable that production will be increased very slowly. The success of the regulation policy adopted last season by heavyweight mills, and the comparatively good season enjoyed as a result, has convinced most knitters of the importance of avoiding surplus. The trade expects 1931 to be better than 1930, but this expectation will have to be supported by sales, before the producers use it as a gauge for production. Heavyweight knitters are pretty sound on this point, and if they follow their present inclination toward caution, they will be protected, in case the season proves a disappointment.

◆Urge Curtailment of Seamless Hosiery

THE slow but steady gains made in the campaign for curtailment of full-fashioned hosiery production has raised the question among Worth Street factors as to the possibility of reducing output of seamless hosiery. The seamless market at present is suffering from a tendency to overproduce. There is some distress merchandise available, and the stocks are sufficiently beyond orders to cause a weakening. Jobbers and retailers lean predominantly to low-priced lines, and there is much bargaining. Seamless moved fairly well when January opened, and the first three weeks brought steady though light business, both in men's and women's goods; demand at the men's end was chiefly for hosiery retailing at 15 to 35c.; mill agents had difficulty in moving the 50c. lines and the quality group was even slower.

The market has slackened further and now even the low-priced half-hose is dragging. Seamless hosiery producers entered the new year a bit too confident regarding prospects and kept operating their mills at capacity for the most part. Their situation indeed was similar to that confronting the women's full-fashioned hosiery producers, the difference being that the latter have reduced their surplus by curtailment. The seamless group kept up production and preferred to cut prices rather than cut output.

Full-fashioned mills are gradually manoeuvering themselves into a better position. The National Association of Hosiery and Underwear Manufacturers announces that the number of mills adopting the curtailment policy has increased to 90, which total includes many leading firms. At the full-fashioned end, the situation while far from ideal, is improving steadily. There is moderate confidence in both full-fashioned and seamless fields this week regarding spring outlook. Both jobbers and retailers are reported to be taking a more optimistic view of the market, though nearby buying on a small scale and small orders still is the general policy. The fact that Easter comes early this year is a point in favor of the market.

◆

Westcott Sees Good Year For Better Quality Grenadines

Westcott Hosiery Mills, of Dalton, Ga., are the owners of the Young patent on production of hosiery from counter twisted yarns, popularly known as grenadine and sold by them under the trade mark, "Grenine"; this company has licensed 75 other firms to manufacture grenadine hosiery under their patent on a royalty basis, and suits of infringement now are pending against several firms. Asked for an expression of opinion regarding 1931 outlook for grenadine full-fashioned hosiery, G. L. Westcott, president of Westcott Hosiery Mills, writes us as follows:

"The outlook for high counter twisted hosiery made in accordance with our Young patent looks very promising for 1931, particularly in the better classes of hosiery."

Underwear Sales Decline

Knit underwear shipments in December were well below the month previous and also well below shipments for December, 1929, according to figures just made public by the Bureau of the Census of the Department of Commerce; the figures are based on three surveys; the first covers 144 establishments of all classes, the second covers 87 identical cotton establishments. In the first study, December shipments totaled 824,478 dozens, against 1,129,116 dozens in November. The decline was chiefly in winterweight goods. The output of men's heavyweight union suits fell from 118,583 dozens in November to 84,187 dozens in December; men's summer weight union suits, on the other hand, increased from 30,639 dozens in November to 37,585 in December.

Figures on underwear manufacture compiled in another survey, showing comparisons between years, indicate several significant trends. Boys evidently lean to summerweights in two-piece underwear; boys' winterweights for December, 1929, totaled 1,589 doz., falling to 854 doz. in 1930, and their summerweights for December, 1929, totaled 1,069 doz., leaping up to 7,336 in the same month last year. December, 1930, shipments totaled 741,624 against 940,364 in December, 1929.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Firmer on Trade Buying

THE cotton market has shown continued firmness during the week with offerings limited and the demand coming largely from the trade, either to fix prices or to protect future requirements. Prices for all months have made new high ground for the present movement with May contracts on Wednesday selling up to 11.45 or approximately 165 points above the low level reached last December. The advance has met considerable realizing and a little more southern selling which has been readily absorbed with some indications of a broadening trade and commission house interest.

This advance has evidently reflected increasing confidence in the trade outlook and expectations of a reduced crop for next season. So far as American cotton is concerned the hope of an end-season expansion in demand seems to have been encouraged by indications that it will meet less serious competition from other growths during the balance of the season. A further reduction in estimates of the East Indian crop, which is now officially estimated at only 4,836,000 bales in 400-pounds, together with the recent steadier ruling of the Bombay and Alexandria markets have contributed to this view. It is believed that spinners abroad have allowed their stocks to run very low and indications of some improvement in the demand for cotton goods has been accompanied by increased trade buying in the futures market for both foreign and domestic account. The Far East has been among the leading buyers with brokers frequently operating for Japanese account prominent on the buying side of the local market while almost daily Liverpool has reported Continental and Bombay buying in the market there.

More optimistic views as to consumption for the last half of the season have been encouraged by the settlement of the Lancashire dispute over the question of more looms per worker and the decidedly more cheerful view as to prospects for a settlement of disputes in India. Manchester has reported an increasing demand from India, while it is likely that Japan has also benefited from larger orders from this source and perhaps a little more buying from China. Some slight increase was shown in the daily rate of consumption in the domestic mills. It is considered by no means unlikely that by the end of the summer, cotton traders will be looking forward to a world's consumption of nearly 14,000,000 bales for the season 1931-32.

Meanwhile, some beneficial rains have fallen in the South and the ground is well supplied with surface moisture over the greater part of the belt. Crop preparations are said to be further advanced than usual at this time of the year. Rather conflicting reports are heard as to acreage prospects. Some reports from eastern belt sections, for instance, say the reduction may not be more than 5%, but, more generally speaking, the trade is inclined to look for a more substantial reduction over the belt as a whole. Preliminary ideas, indeed, probably average above rather than below a reduction of 10%. Whether it will be sufficient to establish prospects for higher prices next season is a question which may remain unanswered until the Government's estimate is issued early next July. Records of previous years show that during the three seasons when acreage was radically reduced because of low prices and financial conditions, there has also been a reduction in yield per acre. In 1915 following the big crop of 1914 and the breaking out of the World War, there was a reduction of 14.7% in the acreage harvested accompanied by a decrease of 18.6% in yield per acre as compared with the previous year. In 1921 there was a reduction of 15% in acreage and of 30.2% in yield and in 1927 a reduction of 14.8% in acreage and of 15.4% in the average yield per acre.

Last year's weather may affect today's financial situation, but today's finances cannot influence future weather conditions and the crop is dependent largely upon the weather. Lack of money for purchases of fertilizer and the employment of labor however is a matter to be reckoned with in calculations of probable yields and poor cultivation no doubt increases the susceptibility of the crop to damage from either unfavorable weather or insect activities during the growing season.

Better Demand in South

Memphis, Tenn., Feb. 16—Demand for staple lengths of cotton was rather more brisk during the week, with the result that sales in the Memphis market were relatively better than at most other southern centers. During more than one of several recent weeks Memphis sales have been disproportionately small, reflecting more interest in the ordinary run of cotton than in the specialties which make up a large part of the cotton handled in this territory. Interest has centered in bright low grade $\frac{7}{8}$ to $1\frac{3}{32}$ in. for weeks, but the supply here was never large and offerings have been picked over so often that little wanted low-grade short cotton remains. Improved demand was particularly noticeable in the neglected $1\frac{1}{4}$ in. cotton which, as a result, improved the basis about 25 points.

There does not appear to have been much buying by merchants for stock but considerable buying to cover February and early March commitments, together with about the usual seasonal run of small orders for immediate or nearby shipment. Sales totaled 17,977 bales against 20,112 during the corresponding week last year and 22,877 bales the year before. This makes 538,652 bales for the season, against 895,712 last year and 664,439 the year before. The further advance in futures brought out some cotton. Generally speaking there is no selling pressure. Trade feeling is more cheerful. There is suggestion in some quarters that concentration of cotton in the hands of the co-ops and one or two other strong hands, possibly 5,000,000 bales or more in the aggregate, may lead to a tight situation despite the large surplus.

◆Larger Business in Cotton Wastes

SUBSTANTIALLY larger business was transacted in cotton wastes this week, many dealers reporting the best week with respect to volume for some time. Several hundred bales of comber were sold and there was a fairly sizable movement in strips. Threads for machining were also a little more active. Recent firmness in raw cotton has brought about higher prices on peeler comber. Strictly No. 1 comber is quoted around 9c. currently, as compared with $8\frac{1}{2}$ to $8\frac{3}{4}$c. a week or two ago. Even the higher price represents little profit to dealers, many of whom contracted for their comber supplies on a basis of 83-85% of spot cotton.

Dealers view the present situation, however, with greater confidence. While it is true, they point out, that demand has been woefully lacking during the last three or four months, it is equally true that the available supplies of waste have not accumulated to any marked extent because of sharp curtailment in cotton mill operations and greatly restricted imports. They feel that waste prices have now discounted all unfavorable factors and that if raw cotton continues steady any major movement of waste prices must be upward.

◆Improvement Noted In Cotton Yarns

COTTON yarns have made the most notable gains in the last week that have been seen since last fall. Prices are stronger with an upward trend and more buyers are in the market for nearby and future deliveries. One of the most encouraging things is that

NEW WAYS
to net textile profits

NEW thinking backed by genuine *action* is transforming the textile industry. What are these *new ways* and where are they taking us?

Here is a series of industry objectives compiled by the editors of TEXTILE WORLD and published at the beginning of the year. At the right is shown the actual progress that has been made thus far this year—an astonishing record of accomplishment in such a short period.

Objectives	Progress to Date
1. Encouragement of cooperative economic research.	Cooperation was overwhelmingly endorsed at open convention sessions.
2. Development of organized fundamental technical research.	Formation of the U. S. Institute for Textile Research.
3. Establishment of sounder employer-employee relationships.	Length of the work-week cooperatively regulated.
4. Definite apportionment of capital for depreciation and obsolescence to keep plant equipment up to date.	Spotlighting the marked development in textile machinery—awakening realization of the futility of obsolete equipment.
5. Scientific cultivation of export markets—cooperative organization for export selling under Webb-Pomerene Act.	The formation of a cotton-textile export association—the first step toward utilization of the Webb-Pomerene Act.
6. Determination of costs based upon sound and uniform accounting principles.	Formulation of more definite plans for wide dissemination of cost principles—notably in the cotton division.

New machinery is setting the pace—it is the *first* approach to profits today in the textile industry. The mill that can cut its costs even half a cent a pound with improved equipment is pocketing a profit which is not affected by market fluctuations.

If *you* are bringing out new *ways* to net profits tell your story consistently in the advertising pages of TEXTILE WORLD. Mill men are receptive. May we help?

Textile World

BRAGDON, LORD & NAGLE DIVISION

McGraw-Hill Publishing Company, Inc.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

specifications on old contracts have expanded so greatly. Deliveries are being asked for in volume and this is helping the spinner materially.

From the spinners' angle the most discouraging thing is that they have been unable to raise prices in proportion nor as quickly as the raw material market has scored advances within the last two weeks. Yet it is apparent that figuring from the lowest prices that were formerly reported the market has done all that can be expected.

Cotton Upturn Helps

Sales of 20s-2 warps were made at less than 20c. several weeks ago and this week sales have been made within the 21c. to 21½c. limits; this means that yarns have about kept abreast of cotton in actual selling prices, but possibly not so far as average quotations three weeks ago and at present are concerned.

There is a substantial volume of knitting business both for prompt and future delivery. Lightweight counts are being taken actively by underwear manufacturers, there being large sales of 38s combed reported. Dealers find that demand for lightweight counts is better than for several years, this being, they report, the best lightweight season their customers have experienced for a long time.

Weaving yarns are more active. Sales have been made in 10,000 up to 100,000 lb. lots, showing an increase in number of orders and in average size. Specifications on old contracts have expanded and spinners are much more encouraged than a month ago. The upturn in the raw material market has brought many manufacturers who were still waiting for lower cotton into the market for immediate yarns.

Weavers Buying Ahead

Tape, braider, insulator and narrow fabric manufacturers have taken larger amounts this week and have been the most active buying group with the exception of underwear mills. Bulk of orders call for February, March and April delivery; a number of contracts run until next July.

It is generally believed that part of the business, especially in the weaving section, has so far been placed at prices that did not represent an upturn in yarns proportionate with cotton but the trend in yarns is toward a higher level.

Higher prices on combed qualities were reported in Southern markets, especially in the counts ranging under 50s. Spinners were firm in asking 2c. a pound more than basis three weeks ago, with one contract of 175,000 lb., placed at this level. Mercerized yarns were reported to be considerably more active.

◆Wool Buying Shows Expansion

WOOL buying on Summer Street is expanding in volume and during the last week or ten days approximately 10,000,000 lb. have been purchased by mnaufacturers, the cooperatives selling about 70% of the total. Several of the big mills, including the American Woolen Co., have been freer buyers, and, while prices show little change, it is less exclusively a buyer's market, especially in choice qualities of fine domestic wool. A welcome development is the better interest seen in medium wools covering fairly large sales of fleece quarter-bloods of Ohio origin around 25c., the bottom price for many months.

Consumption of wool in New England is maintaining itself well in advance of other sections of the United States. There has been no drift of wool manufacture in New England in any way comparable to the exodus of cotton mills to the South. Month by month, and year by year, New England accounts for more than half the wool consumption of the United States. In 1929 New England consumed 51.3% of total U. S. consumption while last year 54.4% was utilized.

The outlook for any substantially higher price levels for domestic wools must be considered uncertain in face of what is likely to be the largest wool clip in the history of the United States this year. Something may intervene to prevent a record clip, but as 1931 started out with more sheep in the country than at any other period in its history probabilities favor a large clip. Were stocks of wool normal at this time, such an outcome might be viewed with approval, but unfortunately there remains the unsold carry-over of last year's clip, owing to lessened consumption.

Without interpretation the decreased consumption of 140,000,000 lb. of wool last year might seem to indicate a tremendous slump in cloth manufacturing. This, however, was not the case. Decreased consumption of foreign wools for carpet and rug manufacturing accounted for 71,000,000 lb., and, as utilization of foreign clothing wool tended downward throughout 1930, the situation for domestic wools is more satisfactory than indicated on face of returns. The second half of 1931 may lift the entire industry to a higher plane of profitable operation.

The closing of the London wool sales on a strong recovery from the price slump at the beginning of the sales was influential in sustaining sentiment in domestic wool circles. Much of the wool to come on the market in London at the next sales will already have been seen in Australia. Consumers, who may feel disturbed when they hear of so many thousands of bales ready for Sydney, so many thousands for Melbourne, and so on, need not be overwhelmed by the news of many more thousands being available in London for the reason that many of the latter are simply the same wools.

◆Woolen Raw Materials Improve

WHILE interest in white rags continues good and there has developed some appearance of the expected mill demand for the cheaper courser colored materials, the swing is not definite enough as yet to establish a stronger market. Prospects, however, are considered greatly improved. There seems no doubt that the public demand next fall and winter will of necessity be for cheap, attractive, wearable clothing which demand in the past has always been met by fabrics of the woolen order.

Larger buying of wools during the week, both worsted and woolen sorts, is an additional factor of encouragement to waste dealers and may be considered as a signal that the usual buying movement normal at this period of the year is close at hand. White materials still lead in interest. Fine white drawing lap, which has been quoted below par with similar clean wool, has now risen by reason of restricted supply to a slight premium above the wool basis.

Noil sellers meet a conservative attitude on the part of mill buyers, who, while recognizing that prices at which noils are offered are reasonable, have not themselves returned to the degree of expectancy which would permit them to buy materials ahead of their probable requirements. It is rarely that in any market much of anything can be bought at the low points and experience has shown time and time again that a rising market is the prime necessity for the development of buyer interest. As compared with a week ago the local market is more active, sentiment is more optimistic and the situation favors more business at firmer to higher prices.

◆More Stability In Worsted Yarns

THERE has been noticeable improvement in demand for knitting counts but little change in weaving. Rush business is spot merchandise in the goods field has not helped sales yarn spinners to a great degree as yet. Late duplicates

YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

in men's wear mean that if the manufacturer does not have the yarn on hand or on order there is not time for the spinner to make up mixes for the delivery wanted.

If a spinner had the foresight to have made up stock of the count and quality wanted by weavers then they are doing a good business; otherwise there is general complaint from them that the improvement in goods markets has not found its way to them. It will help in the future as it means that most available stock yarns will have been removed from the market and it appears as though the beginning of the next season will see business passing to spinners in volume.

Sellers Are More Confident

Although goods buyers are awaiting the reductions that they confidently expect on the heavyweight fabrics there is a decided feeling in the trade that prices of yarns are about at the bottom. Stronger wool markets throughout the world are having an effect, causing spinners to hold where several weeks ago the trend was definitely downward.

Hope of spinners in the immediate future is in the outerwear section where signs of spring volume are beginning to appear. Spinners have booked more orders but the size of each has not changed materially, manufacturers in most instances only being willing to take small lots at a time, 100 lb., sales being most frequent.

Stock lots of knitting yarns have been well cleaned out and spinners have begun to increase their January rates of operation and in most instances more spindles are being run now in the Philadelphia section than last month.

Bathing-Suit Buying Late

One of the most disappointing features of the outerwear business to date has been the lateness of buying by bathing-suit manufacturers. Large contracts should be on spinners' books by this time but these are the exception and not the rule so far this year. Spinners of single dyed counts in English and French, in most instances are still waiting for volume business from this trade.

Bathing-suit mills feel that they should have the benefit of still lower yarn prices and this is the main reason they have not contracted yet. They have named goods prices which make it imperative for them to secure lower yarns and when this deadlock is broken there will be substantial buying. The bathing-suit season will be a rush one this year, following the woven section example.

It is becoming increasingly difficult for buyers to obtain lower prices and stability seems close at hand.

◆Raw Silk Hesitant As Demand Lightens

RAW silk is uncertain to firm, with prices of 13/15s a possible 5c. above last week. The hectic movement upward seems definitely arrested for the present, and importers regard this as a good sign; the one big hope of the industry is for several weeks of stability which would stimulate confidence among manufacturers. Price jumps, such as featured late January and early February, are a liability rather than an asset, as they frighten away business. Broadsilk mills bought somewhat fitfully, this week; the weavers have slackened up on production pending trade reaction to the summer fabric openings, and production will be slow for another ten days, it is expected. This has acted as a brake on raw silk purchases; orders placed are chiefly small and for spot shipment. Imports continue light, and some of the 20/22s are scarce; 13/15s are plentiful, though not overabundant.

Hosiery Mills Buying

Hosiery mills have begun to show interest, and moderate orders were placed this week; importers are hopeful that these knitters will increase their commitments early in March. Raw silk outlook is less definite, but a period of steady prices would help. Manufacturers look for a price recession, and refuse to cover ahead. Importers themselves consider an easing of prices possible, but do not look for any real drop, as Yokohama holds very firm. Indeed, Yokohama prices in the last ten days have been firmer than New York. Importers complain that it is hard to buy silk in Japan at the selling levels which have prevailed in the American market. The approach of March 1, which brings the closing of the Japanese filatures for a month, has stiffened the market tone in Yokohama, and there is not much likelihood of any early weakness there, as Japanese stocks are light; the surplus, of course, always has to be considered, but nothing official has come from Japan as yet, with respect to placing any part of the surplus on the market.

◆Spinners, Throwsters Both Report Lull

THERE is no spirited demand manifest in either the spun or the thown silk markets. Thrown yarn prices have weakened, due to to slackening of orders from broadsilk mills. These weavers are in a waiting mood, pending some reaction to their summer offerings, and probably will not resume buying activity for another two weeks. Throwsters find little to encourage them in the outlook; the season is the worst they have known for some years, and the prospects do not promise any early improvement. A few broadsilk mills placed moderate orders mostly for crepes, for spot shipment this week; hosiery mills have been inquiring, but no appreciable business has come from that division as yet. Thrown yarn stocks are fair.

Spinners are in a better position, comparatively, but here too buying has lessened, and for the same reason. Weavers of shantungs have considerable stock on hand and they are curtailing output, pending some reaction from garment manufacturers and retailers at the summer fabric openings. Spinners are placing fair spot business, but demand is well below last month. They look for a pick-up, when shantung fabrics begin to move for summer dress production. Spun yarn volume for the season has been good, but profit margin is meager.

◆Good February For Rayon Yarn

RAYON yarns continue to move actively, and indications this week are that February turnover will be well above normal. The recent cut in prices, together with the gradually increasing confidence in business generally, have made consuming industries more ready to place business. There is a slight tendency toward future buying; some firms have covered their March requirements; this is significant only as a promise of gaining confidence; it means little in actual sales, the overwhelming majority of manufacturers holding to a strictly spot basis on their commitments. Both weavers and knitters placed substantial business this week; 150/60 as usual was the best-selling yarn, and several producing firms report a shortage on this line.

Output of 150/60s has increased, but there is no disposition to accelerate production generally. The prevailing sentiment among producers is that existing stocks, except in the case of the 150/60 filament yarn, are more than sufficient to fill any reasonable increase in orders. The current surplus, estimated variously at 20,000,000 to 25,000,000 lb., indeed, has not yet been appreciably reduced by deliveries, and the current buying, though undeniably active, would have to continue for some time, to cause any real dent in the surplus. Producers are encouraged by the present outlook. They find their outlet industries optimistic regarding spring prospects, and while there is no enthusiasm manifest at any end, the undertone is firmer. Producers are

hopeful that buying will hold steady through the next two months; indeed, they rely on that period to bring normal turnover, as the season usually begins to wane early in May.

Rayon waste, which has been in the doldrums for months, is showing signs of revival, and dealers are hopeful that the turning-point is near. There was a fair call for open waste this week, and not too much stress on price. Thread waste also was changing hands, but at prices which left scant margin for the dealers. Garnetters are reported to be in a better position and to be receiving some business. They are in the market for limited quantities of waste, but the buying is far from confident.

◆Reports Show Few Profit Makers in 1930

FINANCIAL reports from various mills continue to show vividly the difficulties faced during 1930. Despite losses, however, a surprising large number of mills have improved their position by reducing inventories, paying off borrowings, increasing their cash on hand.

Contoocook May Liquidate

Contoocook Mills Corp., Hillsboro, N. H. has called a special meeting of stockholders for February 26 to vote upon the desirability of selling all assets and business of the corporation and of Pawtucket Hosiery Co., wholly-owned subsidiary. In 1930 the company reported loss of $87,853 after depreciation compared with net loss in 1929 of $73,333. Current assets as of Dec. 31, 1930 totaled $425,771, and current liabilities $261,671, leaving working capital of $164,100. Sales declined in 1930 to $381,000 from $636,000 in 1929. In order to continue operations a large amount of new capital will have to be provided, and as the large stockholders believe it inadvisable to provide such additional capital, directors feel that the company should be dissolved.

Bigelow-Sanford Report

Bigelow-Sanford Carpet Co., Inc., reports for year ended Dec. 31, 1930, an operating profit before interest on serial notes of $1,116,513. After charging off $860,459 for depreciation, $243,750 interest on serial notes, and inventory adjustments of $621,006, the company showed a final net loss for the year of $608,710. This compares with net profit of $1,854,112 after all charges in 1929. Net sales for the year were $22,436,931, compared with $23,964,902 in 1929, which sales included only the December, 1929, sales of the former Stephen Sanford & Sons, Inc.

Despite losses of the last year, the balance sheet reflects a strong financial position. Cash increased from $501,775 at the end of 1929 to over $3,106,000 as of Dec. 31, 1930; inventories have been reduced from $15,299,008 to $7,632,666 and current liabilities dropped from $2,749,381 to $484,637 at the close of 1930.

Belding Heminway Loss

Belding Heminway Co. reports for year ended Dec. 31, 1930, net loss of $1,541,287 after interest, depreciation, amortization and inventory write-down, against net loss in 1929 of $163,644. Balance sheet as of Dec. 31, 1930 showed current assets totaling $5,171,025 and current liabilities of only $83,634, a ratio of 61.8 to 1. During the year the company retired the balance of its preferred stock and in addition retired $554,000 par value of its 6% convertible gold notes.

Kayser Net $624,318

Consolidated net income of Julius Kayser & Co. and affiliated companies, for the six months ended Dec. 31, 1930, amounted to $624,318 after interest, reserve for taxes and depreciation, equal, after deducting dividends of $18,457 paid on the employees' preferred stock, to $1.28 per share on 474,122 shares of common stock outstanding. This compares with a net profit of $1,365,872, or $2.73 per share on 484,122 common shares reported for the six months ended Dec. 31, 1929, and $1,571,439, or $5.54 a share on 276,739 shares in the same 1928 period.

Rollins Shows Big Drop

The annual report of the Rollins Hosiery Mills, Inc., Chicago, shows net profits for the 52-week period from Jan. 4, 1930, to Dec. 31, 1930, of $35,257 after depreciation, interest, and Federal taxes. This compares with $450,350, equal after preferred dividends to $7.66 a share on 40,000 common shares reported for the 54-week period ended Jan. 4, 1930.

Quissett Mill Shows Loss

The Dec. 31, 1930 balance sheet of Quissett Mills, New Bedford, Mass., indicates a loss of $114,525 for the 1930 fiscal year, all but $30,000 of which was due to inventory markdown. In 1929 there was a profit of $129,817 before depreciation and in 1928 a loss of $74,664. The excess of quick assets over quick liabilities was reduced from $1,935,476 to $1,736,059. The mill paid out $100,000 in dividends during 1930.

Financial Brevities

Goodyear Tire & Rubber Co. reports for the year ended Dec. 31, 1930, net profit of $9,912,233 after interest, depreciation, Federal taxes and provision for inventory writedown of finished and unfinished goods and after including $5,000,000 reserve for inventory adjustment. This compares with net profit of $18,614,374 in 1929 after charges and taxes and reserve of $1,250,000 for contingencies.

A net loss of $750,350 from operations in 1930, as compared with a net profit of $625,000 in the preceding year is shown in the annual report of Royal Weaving Co., Pawtucket, R. I. According to the report, total sales for the year were $5,206,995 as compared with sales of $7,607,585 in 1928. Figures for 1929 are not available. Depreciation reserves at the close of 1930 amounted to $2,220,829.

Firestone Cotton Mills, Fall River, Mass., has filed with the State commissioner a balance sheet for the year ended Oct. 31, 1930, showing a surplus of $445,925, compared with $426,620 in the previous year.

Net profits of Linen Thread Co., Ltd., Glasgow, Scotland, for the fiscal year ended Sept. 30, 1930, amount to £110,556, against £264,549 for the previous year.

The annual statement of the Shawmut Mfg. Co., Fall River, Mass., shows the surplus and reserve account to be in excess of $700,000, a reduction of about $38,000 from the previous year.

Annual statement of the Shove Mills, Fall River, Mass., showed little change from the previous year. Reduction of the capital stock, as authorized by the directors during the year, has not been definitely completed to carry the change in this year's report.

A loss of $36,000, after Federal taxes and inventory markdown, but before depreciation was reported by Dartmouth Mfg. Co., New Bedford, Mass., for the year ended Dec. 27, 1930. In 1929 there was a manufacturing profit before depreciation of $314,000. Surplus of quick assets over quick liabilities on Dec. 27, 1930 was $1,083,321, a decline of about $250,000 from a year ago.

Cabot Mfg. Co., Brunswick, Me., reports for year ended Jan. 3, 1931, net profit, after depreciation and inventory markdown, of $181,653 as compared with net profit after charges in previous year of $349,213. Working capital at the close of the last fiscal year showed an increase of $33,730 to $1,191,879, and surplus account a gain of $21,654.

A loss of $156,086 is recorded in the Dec. 31, 1930 balance sheet of New Bedford (Mass.) Cotton Mills Corp. Inventory account was cut $320,000 to $364,403 and accounts and notes payable were reduced $152,000 during the year.

Mohawk Carpet Mills report net loss of $599,779 in the year ended Dec. 31 after depreciation and charges except an inventory writeoff of $824,269 charged to surplus. In 1929 there was a net income of $1,812,140.

Davenport Hosiery Mills shows net profit of $313,896 after all charges for the year ended Dec. 31, 1930, as compared with a profit of $444,633 in 1929.

Soule Mill, New Bedford, Mass., reports for 1930 net profit of $5,004 after depreciation of $63,000. Dividends paid during the year totaled $75,600. Net working capital at the end of the year was $690,315, compared with $720,883 the year before. Surplus was reduced from $609,574 to $535,044.

Booth Mfg. Co., New Bedford, Mass., reports for year ended Dec. 31, 1930, profit of $17,000 before depreciation charges of $76,000. Net working capital was $253,807 at the end of the year as against $242,056 at the end of 1929.

QUOTATIONS

at close of business, Feb. 18, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	Feb. 18	Feb. 10	Feb. 19, 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	5½c.	3⅝–3¾c.	4⅜–4½c.
3½-in., 64x60, 5.35	5½c.	5½c.	6⅜–6½c.
39 -in., 68x72, 4.75	6¼–6½c.	5⅞—6c.	7⅜–7½c.
39 -in., 72x76, 4.15	6¼–7c.	6¾c.	8¼c.
39 -in., 80x80, 4.00	7¼–7¾c.	7¼–7¾c.	9–9¼c.
BROWN SHEETINGS			
36-in., 56x60, 4.00..	5¾c.	5¾c.	7¾c.
36-in., 48x48, 3.00..	6¼c.	6¼c.	9¼c.
37-in., 48x48, 4.00..	5–5¼c.	5¼c.	7–7¼c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70.	6c.	5¾c.	7¼–7½c.
36½-in., 64x60, 5.75.	5c.	5c.	6¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd...	6¼c.	6¼c.	9¾c.
Denims, 2.20.....	11¼c.	11½c.	15c.
Tickings, 8 oz.....	15 c.	15 c.	19½c.
Standard prints.....	7½c.	7½c.	9½c.
Eastern staple ginghams, 27-in.....	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	8¾— 9¼
Peeler strips	7½— 8
Sak. comber	8 — 8½
Choice willowed fly	3¾— 4¼
Choice willowed picker	3 — 4
Sak. strips	10 —10½
Linters (mill run)	2¾— 3¼
White spooler (single)	6¼— 7

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s...	$0.18½	22s....	$0.23
10s.....	– .19	24s.....	– .24
12s.....	– .19½	26s.....	– .25
16s.....	– .20½	30s.....	– .26
20s.....	.21 – .21½	40s ex. qual.	– .37

TWO-PLY SKEINS AND TUBES

8s-2.....	$0.18½	26s-2.....	$0.25
10s-2.....	– .19	30s-2.....	.26 – .26½
12s-2.....	– .19½	36s-2.....	– .32
14s-2.....	– .20	40s-2.....	– .34
16s-2.....	– .20½	40s-hi.brk..	– .37
20s-2.....	– .21½	50s-2.....	– .41
24s-2.....	– .24	60s-2.....	– .51

SINGLE WARPS

10s.....	$0.19	24s.....	$0.24 .24½
12s.....	– .19½	26s.....	.25 – .25½
14s.....	– .20	30s.....	.26 – .27
16s.....	.20½ – .21	40s.ex.qual	.37 – .38
20s.....	.21½ – .22		

TWO-PLY WARPS

8s-2.....	$0.19	24s-2.....	$0.24 .24½
10s-2.....	– .19½	26s-2.....	.25 – .25½
12s-2.....	– .20	30s-2.....	.26 – .27
14s-2.....	– .20½	40s-2 ordin.	– .35
16s-2.....	– .21	50s-2.....	.42 – .43
20s-2.....	.21½ – .22	60s-2.....	.52 – .53

8s-3 and 4-ply skeins and tubes; tinged, 17-17½; white, 18½; waste, 16-16½

HOSIERY CONES (Frame Spun)

8s.....	$0.18½	22s.....	21½$0.22
10s.....	.18½ – .19	24s.....	22½ – .23
12s.....	19 – 19½	26s.....	23 – .23½
14s.....	19½ – .20	30s tying....	– .25½
16s.....	20 – .20½	30s reg.....	– .27
18s.....	20½ – .21	30s ex.qual.	.29 – .29½
20s.....	21 – .21½	40s.....	.34 – .35

COMBED PEEI ER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2.....	$0.34 – .35	60s-2.....	$0.54 – .55
30s-2.....	.38 – .39	70s-2.....	.64 – .65
36s-2.....	.40 – .41	80s-2.....	.74 – .76
40s-2.....	.42 – .43	90s-2.....	.90 – .93
50s-2.....	.47 – .48	100s-2.....	1.10 –1.15

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2.....	$0.35	60s-2.....	$0.55
30s-2.....	– .40	70s-2.....	– .65
36s-2.....	– .41	80s-2.....	.75 – .77
40s-2.....	– .43	90s-2.....	.92 – .95
50s-2.....	– .48	100s-2.....	1.12 –1.17

SINGLES

12s.....	$0.27½ – .28	30s.....	$0.37½ – .38
14s.....	.28 – .28½	38s.....	.40 – .40½
16s.....	.28½ – .29	40s.....	.41 – .41½
18s.....	.29 – .29½	50s.....	.47 – .47½
20s.....	.30 – .30½	60s.....	– .54
24s.....	.32½ – .33	70s.....	– .63
28s.....	.36 – .36½	80s.....	– .73

MERCERIZED CONES—(Combed, Ungassed)

26s-2.....	50–$0.52	90s-2.....	–$1.29
30s-2.....	52 – .54	100s-2.....	–1.59
36s-2.....	55 – .57	120s-2.....	–1.99
40s-2.....	58 – .60	30s.....	– .63
45s-2.....	60 – .62	40s.....	– .68
50s-2.....	62 – .64	50s.....	– .75
60s-2.....	70 – .72	60s.....	– .83
70s-2.....	82 – .84	70s.....	– .95
80s-2.....	94 – .96	80s.....	–1.17

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Feb. 13	—For Week— High	Low	Closed Feb. 18	Net Chge.
February..	11.78	11.03	10.73	11.03	+.25
March.....	10.90	11.16	10.83	11.15	+.25
April.....	11.04	11.29	10.99	11.29	+.25
May.....	11.18	11.45	11.08	11.44	+.26
June.....	11.30	11.56	11.24	11.56	+.26
July.....	11.43	11.69	11.33	11.69	+.26
August....	11.56	11.82	11.52	11.82	+.26
September.	11.59	11.87	11.54	11.87	+.28
October....	11.69	11.99	11.61	11.97	+.28
November	11.79	12.07	11.74	12.07	+.28
December..	11.90	12.17	11.80	12.17	+.27
January ..	12.00	12.25	11.88	12.25	+.25

SPOR FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Friday, Feb. 13	11.00	10.67	5.85
Saturday, Feb. 14.....	10.95	10.67	5.93
Monday, Feb. 16.....	10.95	10.67	5.96
Tuesday, Feb. 17.....	11.05	Holiday	5.96
Wednesday, Feb. 18....	11.25	10.93	6.05

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Feb. 17		Change
March Sak	17.50	+0.16
April uppers	12.55	+0.32

Feb.-Mar. Shipment c. i. f. Boston.
(Tariff not included)

Fully good fair Sak	20.15
Fully good fair to good Uppers	15.55

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	19½
Peruvian Pima No. 1	19½
Peruvian Moderate Rough	16
Peruvian Full Rough	21
China Tientsin No. 1	9½
India Rough	7 to 10
India Smooth	7 to 10

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Feb. 14	Saturday, Feb. 7
10 markets average	10.23	9.93
Memphis	9.60	9.35

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	12.50—12.70c.
1 3/16-in	14.00—14.25c.
1¼-in	18.75—19.00c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	17,977	11,816	15,402
F.o.b. included in total	14,670	9,221	10,428
10 markets	62,420	57,360	63,394

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	7,896	12,848	13,497
Gross receipts	25,392	35,231	45,012
Total since Aug. 1. net	580,961	819,422	706,173
Shipments	39,521	44,537	58,587
Total since Aug. 1	879,682	1,260,198	1,225,899
Total stock	350,659	398,500	257,021
Decrease for week	14,129	9,306	13,575
Unsold stock in hands of Memphis factors	59,214	50,357	.....
Increase for week	132	*3,818	.....

*Decrease

AVERAGE PRICE FEB.-MAR. SHIPMENT
HARD WESTERN COTTON
F. o. b. New England

	Middling	St. Middling
1 1/16 in	12½–12¾c.	12¾–13 c.
1⅛ in	13 –13¼c.	13¾–14 c.
1 3/16 in	15 –15¼c.	16 –16¼c.
1¼ in	21 –22c.	22 –23c.

Basis on New York, March 10.98c.

SPOT FLUCTUATIONS AND STOCKS

	—Middling— Feb. 10	Feb. 18	Sales	—Stocks— This Week	Last Year
Galveston.....	10.65	11.00	3,356	616,753	378,898
New Orleans.	10.60	10.93	6,883	771,931	500,348
Mobile.....	10.00	10.35	884	215,137	36,828
Savannah....	10.30	10.75	2,076	341,459	65,520
Norfolk.....	10.38	11.00	829	93,633	67,939
New York....	10.90	11.25	.....	227,789	99,846
Augusta.....	10.19	10.69	1,186	111,254	96,308
Memphis....	9.55	9.90	14,545	344,720	395,730
St. Louis....	9.40	9.80	.....	16,797	13,880
Houston.....	10.55	11.00	28,437	1,388,603	987,527
Dallas.....	10.05	10.40	12,012	18,202	13,232

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F.....	.75†	1.00†	.85†	.75†	0.87†
S. G. M.....	.60†	.75†	.75†	.63†	.70†
G. M.....	.50†	.50†	.60†	.50†	.51†
S. M.....	.35†	.25†	.35†	.25†	.30†
S. L. M.....	.60*	.75*	.65*	.50*	.55*
L. M.....	1.35*	1.50*	1.50*	2.25*	1.32*
S. G. O.**....	2.25*	1.75*	2.50*	3.50*	2.11*
G. O.....	3.25*	2.00*	3.50*	4.50*	2.77*

YELLOW TINGED

G. M.....	0.50*	0.75*	0.50*	0.50*	0.58*
S. M.....	1.00*	1.25*	1.00*	1.00*	0.98*
M.**.....	1.75*	1.50*	1.50*	1.50*	1.50*
S. L. M.....	2.50*	1.75*	2.25*	2.25*	2.09*
L. M.**.....	3.50*	2.00*	3.00*	3.00*	2.77*

YELLOW STAINED

G. M.....	1.50*	1.75*	1.50*	1.50*	1.50
S. M.**.....	2.25*	2.00*	2.50*	2.50*	2.10
M.**.....	3.00*	2.50*	3.50*	3.50*	2.83

BLUE STAINED

G. M.**.....	1.75*	1.50*	1.75*	1.75*	1.53*
S. M.**.....	2.25*	1.75*	2.75*	2.75*	2.08*
M.**.....	3.00*	2.25*	3.75*	3.75*	2.80*

**Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.29 –$0.30	¾ blood.....	$0.25 –$0.26
Fine clthg ..	.23 – .24	½ blood.....	.25 – .26
¼ blood.....	.28 – .29		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.63 –$0.65
California, Northern	.58 – .60

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.68 –$0.70	B-Super...	$0.43 –$0.48
A-Super....	.52 – .55	C-Super...	.38 – .40

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.65 –$0.68
Staple ½ bld.	.61 – .63
Fine and fine medium	.60 – .62
¾ blood	.51 – .53
½ blood	.48 – .50

MOHAIR—DOMESTIC

Best carding	$0.28 –$0.30
Best combing	.42 – .45

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.15 –$0.18
Cape firsts	.15 – .18

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.50 –$0.52
64s	.40 – .42
58s-60s	.38 – .40

(IN GREASE)

Montevideo:	
58s-60s	$0.18 –$0.19
56s	.17 – .18
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.13 –$0.14
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.20 –$0.22
China: Combing No. 1	.11 – .12
China Filling Fleece	.10 – .11
Szechuen ass't	.11 – .12
Cordova	.11 – .12
Scotch black face	.13 – .14
East India: Kandahar	.18 – .19
Vican'r	.22 – .24
Joria	.21 – .22

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.80 –0.82½
2-24s 40s	.90 – .92½
2-26s 44s	.92½ – .95
2-28s 46s	1.00 –1.02½
2-30s 48s	1.05 –1.07½
2-32s 50s	1.10 –1.12½

(Single yarns 5c. less than above)

2-36s, 58s	$1.30 –1.32½
2-40s, 60s	1.35 –1.37½
2-40s, 64s	1.40 –1.42½
2-50s, 66s	1.55 –1.57½
2-60s, 70s	1.90 –1.95

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.80 –0.82½
2-20s, 48s in oil	.85 – .87½
2-20s, 50s in oil	87½ – .90
2-20s, 56s in oil	.97½–1.00
2-20s, 60s in oil	1.17½–1.20
2-20s, 64s in oil	–1.27½
1-15s, 46s dyed	.97½–1.00
1-15s, 48s dyed	1.00 –1.02½
1-15s, 50s dyed	1.02½–1.05

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.10 –1.12½
1-20s, 60s	1.15 –1.17½
1-18s, 64s, dyed	1.35 –1.40
1-26s, 64s	1.20 –1.22½
1-30s, 60s, Warp	1.22½–1.25
1-30s, 64s, Warp	1.25 –1.27½
2-30s, 64s, Fancy mixes	1.55 –1.57½
2-40s, 64s, Zephyrs	1.40 –1.42½
1-50s, 66s	1.55 –1.57½
2-50s, 66s	1.62½–1.65
1-60s, 70s	1.90 –1.92½
2-60s, 70s	2.00 –2.05

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.00 –1.02½
1-40s, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.88–$0.90
Half-blood (60-62s)	.83– .85
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.75– .78
Low ¾ blood	.70– .73
High ½ blood (50s)	.65– .68
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.56– .58

TOPS—BRADFORD, ENG. (FEB. 13)

Fine (70s)	25½d	¾ bld. (56s)	15½d
Fine (64s)	22½d	½ bld. (50s)	12½d
¾ bld. (60s)	20½d	Cross-bred (46s)	10 d
¾ bld. low (58s)	17½d		

NOILS—BOSTON

Fine	$0.43–$0.45	High ½ bld.	$0.31–$0.33
Half-bld.	.38– .42	Low noils	.31– .33
Aver. ¾ bld.	.33– .35	Medium colored	.25– .28
Fine colored	.32– .35		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.68 –$0.70
Lap, fine colored	.48 – .52
Hard ends, fine white	.52 – .55
Hard ends, ¼ blood white	.35 – .38
Hard ends, fine colored	.25 – .27
Hard ends, medium colored	.18 – .20
Card, fine white	.23 – .27
Burr, fine Carbonizing	.30 – .33

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05½
Merinos, Fine Dark	.04 – .04½
Merinos, Fine Light	.11 – .12
Serges, Blue	.06 – .06½
Serges, Black	.06 – .06½
Serges, Red	.08 – .09
Knit, White	.25 – .26
Knit, red	.10½ – .11½
Knit, Light Hoods	.12 – .13
Worsted, Light	.05½ – .06
Worsted, Blue	.06½ – .07
Worsted, Black	.06½ – .07

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%.	$4.25
Japan organzine, 2 thd. sp. crack. sk. 81%.....	3.75
Japan crepe, 3 thd. gd. XX bob. 83%	4.00
Japan crepe, 3 thd. sp. crack. bob. 81%	3.85
Japan crepe, 4 thd. crack bobbins, 78%	3.55
Japan grenadine, 4 thd. sp. grand singles, 87%	6.00
Japan grenadine 4 thd. 85%	5.70
Japan grenadine 3 thd. 90%	7.00
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.75
Hosiery tram, 3 thd. Japan 90%	5.05
Hosiery tram, 5 thd. Japan, 85%	4.10
Hosiery tram, crack XX 78%	3.25

SPUN SILK YARNS (Terms: net 30)

40/2	$3.15	60/2	$3.35
50/2	3.25	62/1	2.35

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.65	$2.95	$3.00
Special Grand, 85%	3.20	2.80	2.85
Grand XX, 83%	3.00	2.75	2.80
Special Crack, 81%	2.80	2.65	2.70
Crack XX, 78%	2.75	2.60	2.65
Extra Extra, 73%	2.60	....	....
Best Extra, 68%	2.55	....	....

Canton filature, new style, 14/16	$1.75
Canton filature, new style, 20/22	1.55
Tussah filature, 8 cocoon	1.15

NATIONAL RAW SILK EXCHANGE

	Close Feb. 10	For the Week High	For the Week Low	Close Feb. 17	Net Chge
February	2.55	2.65	2.49	2.54	—.01
March	2.55	2.58	2.47	2.52	—.03
April	2.55	2.57	2.49	2.48	—.07
May	2.49	2.57	2.44	2.46	—.03
June	2.47	2.54	2.41	2.44	—.03
July	2.46	2.49	2.41	2.43	—.03
August	2.45	2.49	2.41	2.42	—.03
September	2.45	2.48	2.41	2.42	—.03

Total contracts, 471. Total number of bales, 4,710.
Total approximate value $13,717. Trading unit crack XX 13/15 white, 78%

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18–30	1.35	1.25
100	18–40	1.10	1.00
125	36–50	1.00	.90
150	30	.70	.67
150	40	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30	.75	.72
200	35–42	.75	.72
300	42–62	.63	.69
450	54–60	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0 72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.13
Open unbleached waste	– .11
Bleached thread waste (mfs.)	– .09
Bleached thread waste (misc.)	.05– .07
Colored thread waste	...– .04
Colored clips	...– .04

CONVERTED RAYON WASTE

Bleached tops	$0.30
Unbleached tops	.27
Bleached noils	.10
Bleached garnetts	.13
Unbleached garnetts	.14
Colored garnetts	.12

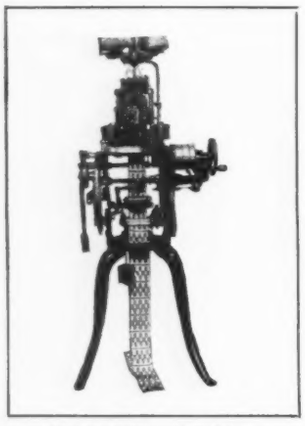
Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

A BRINTON Knitting Machine Will Do It

Don't let the Knitting Machine problem hold you up when you are contemplating making a different type of merchandise. Brinton makes Knitting Machines of all kinds—for every purpose from the smallest diameter to the largest. You can get into production immediately, without loss of time by calling in the Brinton representative.

If the precise style of machine you require isn't standard with Brinton—Brinton will make the machine you want for you.



Trick Wheel Ribber

Ribbers—of every type.

Jersey Machines—Plain and Fancy stitches.

Rib body machines for underwear and bathing suits.

Sweater machines—Rib and Jersey Types.

Special Knitting Machines from ¼″ to 36″.

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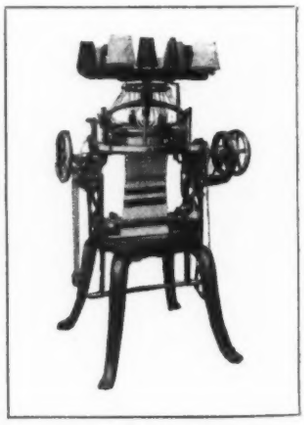

Scarf Machine

CIRCULAR KNITTING MACHINES

BRINTON

of EVERY Kind for EVERY Purpose

Vestal Bill Defended and Opposed in Symposium

THE pros and cons of the Vestal Design Copyright Bill, now pending before the Senate, were reviewed in detail at a symposium luncheon held by the New York Board of Trade at the Hotel Commodore, New York, on Tuesday. The chief speakers were Horace B. Cheney, vice-president of Cheney Bros., silk manufacturers, who supported the bill and explained its advantages as regards the suppression of design piracy, and Channing E. Sweitzer, managing director of the National Retail Dry Goods Association, who opposed the measure.

Mr. Cheney disavowed the idea of debate, and said he aimed merely to interpret the bill. He traced the history of the present patent law, pointing out that this law does not affect designs, as designs are not inventions. The practice of design pirating, he said, began many years ago in a small way but developed fast when manufacturers found there was no law against it. He told of the legislative battle waged by Cheney Bros., which resulted in a court ruling to the effect that, while the firm had a legitimate grievance because of stolen patterns, the law did not offer protection.

Mr. Sweitzer, as well as the other opponents of the bill, expressed sympathy with the manufacturers who suffer from design theft, but he contended that the bill, if enacted into law would do more harm than good. He objected to the scope of the measure, as being too far-reaching and said it would cause serious confusion among retailers, because thousands of items in their lines would be affected. Mr. Sweitzer added that he did not think the bill, in its present state would serve the purpose of eliminating piracy, and criticized several provisions as "not severe enough" from the point of view of the fabric manufacturer.

Kenneth Collins, executive vice-president of R. H. Macy & Co., Inc., New York, voiced similar opposition to the measure. He said the bill would hinder the stores in their buying methods.

"We want free buying and free selling," he added, "The retailer faces 100 injunctions if he buys goods which may infringe on other goods, and he must be the judge of a vast line of merchandise, to determine whether the goods do infringe. We are not the villain of the piece, and we have no sympathy with design piracy, but this law would cause us either to ease up on buying from firms accused of infringement or to hire patent attorneys and go ahead and take the consequences; probably we would do the latter. We know there are cases of flagrant piracy, and we urge that an impartial board should handle that question, and stop the sale of goods obviously pirated."

Paul Hyde Bonner, of Stehli Silks, Inc., made a strong plea for the bill. He quoted dress manufacturers who are turning away from prints because they are so frequently undersold with copies.

F. Eugene Ackerman read a statement from Julius Forstmann, of Julius Forstmann & Co., strongly approving of the bill. Mr. Forstmann cited the following points in favor of it:

"The unrestricted imitating of fabrics which have established style and quality supremacy results in a similarity in type of materials in all price ranges, the very important difference being in the quality. Imitators proceed apparently upon the assumption that they have vested property rights in the creations of others, and that it is not only an ethical, but indeed a praiseworthy business practice, to imitate cheaply a fabric and sell it on the reputation created by the high quality of the original.

"Merchants and garment manufacturers alike can contribute greatly to the stabilization of the textile industry and their own businesses if they will adopt a policy of refusing to buy imitations of fabric originations for their lower priced lines.

"The Vestal Bill should be passed by Congress this season. Its passage will give us a legal weapon by which we may protect ourselves against the present flagrant piracy of weave and design, and it will go far toward eliminating from the textile industry those manufacturers whose unscrupulous conduct has brought about the present situation."

Mauney-Steel Elects New Officers

Annual meeting of the stockholders and directors of Mauney-Steel Co., Philadelphia, was held Feb. 14 at the company offices. The following officers were elected for the ensuing year: D. H. Mauney, pres.; J. C. Craig, vice-president; D. A. Rudisill, secretary; P. S. Steel, treasurer and general manager. The board of directors consist of the above officers and the following: D. C. Mauney, C. E. Neisler, W. K. Mauney, and J. M. Matlack. The latter was also elected assistant treasurer. J. S. P. Carpenter, it was announced, has resigned from the firm.

Single-Unit F.-F. Hosiery Must Not Sacrifice Advantages

(*Continued from page 32*)

merchandise. It is well for the full-fashioned producers to bear in mind that a circular knit stocking can only be cheaply produced when it is seamless, as any seaming costs money. The cheap way to produce a stocking, therefore, is on a continuously operating circular machine, which has to date been capable only of producing the same number of loops at the leg top, angle, foot, and toe, regardless of the fact that these various portions of the leg of the normal wearer are not at all alike. If, however, the full-fashioned industry makes any concessions as to structural changes, the seamless-stocking producers might well be able, by adding a few seams or by altering their machine structure, to compete more nearly with the fashioned product; and this, from the full-fashioned standpoint is not at all desirable.

By the foregoing, I do not wish to infer that full-fashioned hosiery must always be produced on two machines, nor do I wish to infer that the many present manual movements are all desirable or necessary. I believe it is possible entirely to eliminate manual operations, and I am also quite certain that practical means will eventually be evolved for producing the present type of full-fashioned stockings on the machine in an entirely automatic manner.

Full-Fashioned Hosiery Prices Raised

The much-talked-of increase in full-fashioned hosiery prices became a reality this week, when Society Maid Hosiery Mills and United Mills Products Corp., both announced through their New York offices an upward revision of prices. Society Maid raised its rates on an average of 50c. per dozen on warehouse deliveries,, and the United Mills advanced prices 25c. per dozen. The increases were attributed to the recent rise in raw silk prices; this is the first official increase in full-fashioned hosiery prices in several years, and is viewed as indicating a general strengthening of market.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Feb. 14, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Feb. 14	Total to Date 1931	Total to Date 1930
Domestic	265,000	4,934,000	11,540,000
Foreign	1,029,000	7,508,000	12,095,000
Total	1,294,000	12,442,000	23,635,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,029,000	7,508,000	12,095,000
Philadelphia	425,000	4,197,000	13,582,000
New York	179,000	5,168,000	7,643,000
Total	1,633,000	16,873,000	33,320,000

Effect of Reversing Direction of Flats on Cotton Cards

(*Continued from page 33*)

permitting the attendant complete freedom and safety while threading the warp through. With the toggle-joint attached, it is still possible to lift the rolls by hand to adjust the roll or inspect the roll bearings and other parts of the vat.

A single setscrew locks the outside collar of each toggle-joint to the slasher roll shaft. Simplicity of design permits the device to be attached on old machines without drilling or machine work of any kind. The steel lifting rod is removable, and it may be bent to avoid obstructions and to suit the convenience of the operator.

If your mill can't make a profit with obsolete machines what will be your answer to the inevitable? Will you close your doors or modernize your equipment?

Let us show you how much less expensive the latter course will prove.

TEXTILE MACHINE WORKS
Reading, Pa.

The "READING"
Full-Fashioned Knitting Machine

Preparing for A.C.M.A. Annual Convention

The thirty-fifth annual covention of the American Cotton Manufacturers Association, which will be held at the Bon Air-Vanderbilt Hotel, Augusta, Ga., as announced in TEXTILE WORLD three weeks ago, will begin with a board of government dinner on the evening of April 23 and close at noon on Saturday, April 25, according to W. M. McLaurine, secretary of that organization,

Due to business conditions and the fact that a large attendance is desired at this convention, the place of meeting was changed from Atlantic City to Augusta. The rate at the Bon Air-Vanderbilt will be $10 per day, American plan, per person in single or double rooms with bath. Members have been extended the privileges of the Augusta Country Club which has two splendid 18-hole golf courses and several tennis courts. Green fee is $3 a day.

Cotton Festival to Be Held in Gastonia, March 6-7

An elaborate cotton festival, featuring the style and comfort appeal of cotton goods, will be held in Gastonia, N. C., March 6 and 7, under the auspices of the local Woman's Club, the Gastonia Chamber of Commerce, the Gaston County Textile Manufacturers Association, the Durene Association of America, and The Cotton-Textile Institute, Inc.

Cotton products made in the Carolinas will be exhibited. F. M. Allen, secretary of the Gaston County Textile Manufacturers Association, Charles H. Ross and Miss Annie Broughton are in charge of this feature. The main event will be a style show held in the Gastonia High School where sample garments furnished by the Durene Association and The Cotton-Textile Institute will be exhibited. An interesting program will be arranged.

Again the White Cotton Tuxedo

The Durene Cotton Pickers, a dance orchestra recently organized in Gastonia, N. C., will be attired in white cotton tuxedos. The adoption of white evening clothes is an echo of the mild sensation created by Major Stuart W. Cramer, Jr., textile manufacturer, Cramerton, N. C., when he appeared at the roof garden of the Hotel St. Regis, New York, last summer wearing a white cotton tuxedo. Indications point to the acceptance of white materials for male evening attire during the summer months.

Textile Research Council Dissolved

At a meeting of the executive committee of the Textile Research Council, Boston, recently, it was voted to dissolve the organization and to donate the cash surplus of $109.89 to the U. S. Institute for Textile Research. The Textile Research Council was formed in 1926 for the purpose of promoting pure and applied technical textile research and it was felt that this purpose had been accomplished by the permanent organization of the U. S. Institute for Textile Research, Inc.

Woolen Group Meets At Wool Institute

Woolen manufacturing firms numbering more than 30 were represented at a meeting held Feb. 11 at the Wool Institute, Inc., New York. They discussed such matters as F.O.B. mill selling, giving cuts and yardage without an order and matters pertaining to organization. It was decided that another meeting should be arranged for March 9. Although nothing definite was decided upon it is indicated that these manufacturers feel that the F.O.B. matter is one that should be definitely settled in the near future and several believe that "F.O.B. the mill" will again become common useage. The kind of statistics wanted by Institute members was also discussed.

Committee D-13 Meeting Plans

Tentative program for the meeting of Committee D-13, American Society for Testing Materials, to be held in New York Thursday and Friday, March 12 and 13, with headquarters at Hotel Victoria, calls for sub-committee meetings Thursday morning and afternoon; banquet Thursday evening; visit to U. S. Testing Co., Hoboken, N. J., Friday morning; and general session at Hoboken Y. M. C. A. Friday afternoon. A theater party will be arranged for Friday evening.

D. E. Douty, U. S. Testing Co., 1415 Park Ave., Hoboken, N. J., is chairman of the local committee on arrangements.

Butterfield Perfects New Spiral Sport Fabric

A new spiral sport fabric to be called "Spirette" has just been perfected by the Fred Butterfield Co. of New York and will be included in their spring line. Great interest in the new material centers about its weave, which follows the Paris trend toward rough fabrics with a spiral twist. Made of a cotton and rayon mixture, the cloth has a deep cord with a distinctive top sheen giving a frosty appearance. The number is made under the Viscose Co. "Quality Control Plan."

Report Russia's Linen Output Up 25%.

According to the current issue of "Economic Review of the Soviet Union," the production of linen cloth in Russia during 1930 exceeded that of the previous year by 25%. The total area under flax last year was 1,650,000 hectares. This year an additional 500,000 hectares will be sown to flax, bringing the total to 2,150,000 hectares, the same publication states.

First National Bank of Gastonia to Reopen in March

Re-opening of the First National Bank, Gastonia, N. C., was definitely assured last week when it was announced that a total of $500,000 new stock had been subscribed. This amount of new capital was the requirement set by the Comptroller of the Currency as necessary for successful reorganization of the closed institution.

Notices have been mailed to all subscribers stating that their pledges will be due on Feb. 20, and pending the prompt payment of amounts subscribed to the three trustees (A. G. Myers, E. E. Groves and A. M. Dixon) it is expected that the bank will be reopened early in March. It was announced that 360 new stockholders, including several residents of other counties, had been secured during the two weeks of solicitation.

Credit for the successful campaign to raise the necessary additional capital to re-organize the First National Bank has been attributed to several organizations and outstanding individuals of Gastonia, notably: the Gastonia Chamber of Commerce, the Gastonia *Gazette*, the Citizens National Bank of Gastonia, and members of the committees acting for stockholders of the closed institution. Textile manufacturers were instrumental in putting the drive across.

Russia Seeks Skilled Hat Makers in Reading

Offering high salaries and five-year contracts, agents of the Moscow (Russia) government are circulating among fur, felt and wool hat makers in Reading, Pa., seeking to induce them to go to Russia, according to a TEXTILE WORLD correspondent. Only the best workmen are wanted. Not many have signed contracts thus far. They must agree to stay in Russia five years and to teach Russian workmen all they know about the trade.

Hatmaking has been an industry of importance in Reading for 175 years, but the barehead fad among young men and the growth of rival hat factories in other parts of the country have hurt business. Only a few of the large Reading factories are now in operation. At one time the trade employed 2,500 workers in Reading and many others in smaller plants in rural towns on creeks that supplied cheap water power.

Inventory Reductions During 1930 Shown in Survey

A survey of corporation inventories at close of 1930 made by Ernst & Ernst, New York, shows an actual decline from the year previous of 17.64% and a decline, adjusted for difference in price factor of 5.65%. This same compilation shows corporation sales for 1930 to be 15.12% below 1929.

Among the corporations considered, a classification shows cotton goods inventories off 25.35% actual, 4.53% adjusted; wool goods off 29.50% actual,

17.72% adjusted; hosiery and knit goods, off 30.71% actual, 15.2% adjusted; wholesale dry goods, off 19.56% actual, 1.97% adjusted.

These same classifications show average declines in 1930 sales from 1929 as follows: cotton goods, 21.56%; wool goods, 29.13%; hosiery and knit goods, 8.55% and wholesale dry goods, 18.50%.

New Package for Cheesecloth

Lewis Mfg. Co. Division of the Kendall Co. announces a new type package for its Curity cheesecloth. A carton is used instead of a paper wrapper. The advantage claimed by the company for the new package is that the square cornered carton displays better, and can be opened to show customers the contents, whereas with the conventional paper-wrapped package long used exclusively for textiles, the package has to be broken to show the goods.

The Lewis Co. was the first company to put cheesecloth into packages instead of selling it only by the bolt. In 1930 the company developed its merchandising plans on the idea of two markets for cheesecloth; one, the kitchen, household and personal uses requiring a finer weave; the other, dusting, cleaning and polishing uses, for which the open weave is suited.

Clemson Adds to Its Machinery Equipment

Clemson College (S. C.) Textile School has added new equipment in its textile chemistry and dyeing laboratory, as follows: special high speed hydro-extractor from the American Tool & Machine Co., Boston, Mass.; a Monel metal paddle-type hosiery dyeing machine from the Strickland Pattern Works, Chattanooga, Tenn.; latest type automatic temperature controls made by the Powers Regulator Co., and installed on a Rodney-Hunt piece dyeing machine, a Butterworth dye jig and on several Monel metal lined tubs; a Permutit water softening system; steam heated hosiery drying forms from the Philadelphia Drying Machinery Co.; and automatic recording temperature and pressure control apparatus made by the Taylor Instrument Companies, Rochester, N. Y., and installed on kier boiling equipment.

Curtailed Operations in French Textile Industry

The anticipated revival in the French textile industry has not materialized, owing to the uncertain trend in raw material prices, combined with heavy inventories and declining export demand, according to a cable from Acting Commercial Attache, Daniel J. Reagan, Paris, to the Commerce Department.

The majority of the spinning mills reported short-time operations during January, and in the ribbon industry, 70% of the looms were said to have been idle. Only a few buyers were noted for the heavy offering of low-priced Russian flax.

First Wool Auction Held In Buenos Aires

The first sale of wool at public auction in the Buenos Aires market was held on Jan. 14, 1931, at the Mercado Central de Frutos (Central Produce Market) in Avellaneda, on the outskirts of the city of Buenos Aires, according to a special report received by the Bureau of Agricultural Economics from Charles L. Luedtke, Assistant Agricultural Commissioner at Buenos Aires, Argentina. The auction was confined to Patagonian or southern territory wools, which are composed chiefly of fine and crossbred wools.

The total quantity of wool offered for sale at auction on Jan. 14 consisted of 16 lots amounting to 161,650 lb. The sale was well attended, but the bidding was not very spirited and the prices at which sales of fleeces were made did not greatly exceed the basic prices of 7½ to 10c. a pound established by the auctioneers prior to the sale. About 148,218 lb. of wool were sold and 13,432 lb. were withdrawn. Prices obtained on fleeces ranged from 8.4 to 10.2c.

W. D. Hines Speaks on Cotton Over Radio

The importance of cotton to American agriculture and industry and the dependence upon it of millions of people who wear or use it in some form was described by Walker D. Hines, chairman of the board of The Cotton-Textile Institute, in a radio address Saturday evening, Feb. 14, over the Columbia Broadcasting System. The extensive use of cotton fabrics by Paris dressmakers in their recent spring openings and their popularity with American style leaders was emphasized as indicating an even greater vogue for cotton dresses and accessories.

Army Quartermaster To Buy Wool Goods

Philadelphia Depot Quartermaster, U. S. Army, will receive proposals March 23 to furnish 200,000 yd., olive drab serge, 18 oz., 56 to 58 in. wide for enlisted men's coats and 135,000 yd., olive drab elastique, 24 oz., 56 to 58 in., wide for enlisted men's breeches. Goods must conform with specifications dated Feb. 9, 1931.

Wool Buyers Have Been Contracting in Wyoming

Wool buyers invaded Wyoming during middle January and about 100,000 fleeces have been contracted for in Uinta and Lincoln counties. Most of the buyers offered an advance of 90c. a fleece regardless of the wool resultant.

P. H. Bonner Stresses Vogue For Evening Pajamas

Paul Hyde Bonner, vice-president and general manager of the StehliSilks Corp., returned to New York on Feb. 14 on the "Europa" after attending the Paris openings for the summer of 1931.

"Crepe is by far the predominating note in the present mode," said Mr. Bonner upon his return, "with special emphasis placed on heavy crepes. Paris is showing particular favor to prints of all one color.

"The most prominent innovation of the spring showings was the introduction of evening pajamas. These seem to be the new article which is to be included in the well-dressed woman's wardrobe. These were introduced for the first time in the mid-season openings. The tendency is now for them to replace the former Sunday night dress."

Textile Foreign Trade in 1930

U. S. exports of textile fibers and manufactures thereof totaled $639,852,000 in 1930 or 35% less than 1929 exports of $979,225,000. Imports decreased 40%, or from $1,001,909,000 in 1929 to $600,711,000 in 1930. The 1930 exports exceeded imports by $39,141,000, while in 1929 there was an unfavorable balance, imports being $22,684,000 greater in value. Raw cotton including linters accounted for 77.6% of 1930 exports, while 61% of the imports consisted of unmanufactured textile fibers, both ratios being slightly under 1929. Figures in detail were published by U. S. Department of Commerce.

New Ticker Increases Silk Exchange Service 150%

Due to greatly increased activity on the National Raw Silk Exchange, coupled with the active interest displayed by a considerable quantity of new applications for ticker service, the Western Union Telegraph Co. has installed a new ticker system for transmitting continuous quotations of the Exchange's activities. The new system increased the speed of the ticker service by 150%.

Greenstone Shows 25 New Rayon Fabrics

The Greenstone Silk Corp., of New York, this week opened a complete spring line of rayon fabrics consisting of about 25 new patterns. These included florals in spaced designs, both small and large varieties, as well as the season's popular novelty polka dots. The rayon crepes shown were all made under the "Quality Control Plan" of the Viscose Co.

Connecticut Mill Men Hear Talk on Lubrication

The Eastern Connecticut Mill Men's Association met on Tuesday of last week at Wauregan, Conn. A talk on "Lubrication in Relation to Profits" was given by Edwin J. Ryan, advertising manager of the New York & New Jersey Lubricant Co., New York. There was a large attendance of members.

More Rayon Cuts Possible, Says Investors' Survey

Immediate outlook for the rayon yarn industry is regarded as very uncertain, and further price reductions as possible, in the current rayon survey of "Standard Trade and Securities," an investors' bulletin issued by Standard Statistics Co., Inc., of New York. The survey advises against holding rayon issues and against re-purchases, stressing the fact that end-year surplus exceeded 20,000,000 lb. against an estimated surplus of between 5,000,000 and 10,000,000 lb. at the end of 1929.

Doubt is expressed that the January price cut will stimulate sales sufficiently to bring aggregate demand to a level commensurate with production; the survey adds:

"We think it possible that other price cuts will be required before any appreciable amount of production is withdrawn. There are excessive inventories of unsold yarn to be disposed of; current demand is below output and is expected to register another drop in the next three months."

Reviewing developments since the January cut, the survey comments: "The leading units in the trade are now apparently resolved to let prices find their own level. Such a program will probably eventually mean that those concerns which cannot secure enough business to operate at a profit, or have not resources to tide over a losing period, will necessarily close. Nevertheless no closing of domestic rayon plants have as yet come to our attention. Work on new projects has been held up, and some recently completed plants are not operating, but these are negative achievements. Not until there is at least a temporary reduction of supply (to parallel the drop in consumption expected) will it be safe, in our opinion, to consider the rayon price situation as having attained stability."

Business News

W. C. Scott Also Represents Standard Action Co.

W. C. Scott, formerly with the Textolite Division of the General Electric Co., is now selling the picker sticks produced by the Standard Action Co., Cambridge, Mass., in addition to the Jacobs picker manufactured by the E. H. Jacobs Mfg. Co.

J. H. Grady to Manage John Campbell's Boston Office

John Campbell & Co., New York, manufacturer of dyestuffs and chemicals, announces that John H. Grady has been appointed manager of its Boston Office at 99 Bedford St.

Worthington Appoints Two New Vice-Presidents

H. C. Beaver, formerly executive vice-president of Rolls-Royce of America, has been appointed as a vice-president of the Worthington Pump & Machinery Corp., New York. He will devote his efforts principally to the administration of the sales department. E. E. Yake has been advanced to the office of vice-president to direct manufacturing and engineering, as formerly. The Worthington corporation has had a most successful year, according to reports made at the recent annual meeting of sales executives, in spite of the economic conditions, having made 97% of its sales quota. This quota was the same as that set for 1929.

J. T. Hardaker, Ltd., Opens American Plant at Charlotte

William H. Hall, vice-president of the American branch of John T. Hardaker, Ltd., of Bradford, England, announces the establishment by his company of a plant at Charlotte, N. C.

The plant is located at 201 South Poplar Street and is fully equipped to manufacture everything pertaining to jacquard weaving. Mr. Hall said that the force would be made up entirely of American labor. The company has already installed many jacquard heads, repeating, lacing and piano card cutting machines in this country.

Work of setting up the machinery has been under way for some time and the power was turned on, ready for starting production last week. Mr. Hall, who has been with the English company for 21 years states that this new plant is the only one of its kind south of the Mason & Dixon line.

J. A. Greer to Represent Wickwire Spencer in South

James A. Greer of Greenville, S. C., has been appointed southern representative for the Wickwire Spencer Steel Co. of New York, manufacturers of "Wissco" card and napper clothing.

Mr. Greer is a practical textile manufacturer, having spent many years in southern cotton mills as a carder, spinner and superintendent, as well as southern manager for several textile publications. Such experience has given him a thorough understanding of the operating needs of the textile manufacturers.

Morse Chain Hold Sales Convention

The Morse Chain Co., Ithaca, N. Y., manufacturers of Morse silent chain drives, flexible couplings, and chain speed reducers, have just completed the most enthusiastic sales convention in the history of the company, according to F. C. Thompson, vice-president and general manager. Salesmen were called in to spend three days at the main plant at Ithaca, leaving there by special car for a one-day session at Detroit, where the new marine specialties recently developed were presented to them.

Officials of the Borg-Warner Corp., of which the Morse Chain Co. is a subsidiary, were in attendance at a banquet which marked the close of the convention.

H. W. Foulds Heads Goulds Pump Sales

H. W. Foulds, assistant to the president, has been placed in general charge of all sales work, by Goulds Pumps, Inc., Seneca Falls, N. Y. Mr. Foulds was formerly connected with Servel, Inc., as vice-president.

Carbic Acquires Products Color Corp.

Carbic Color & Chemical Co., Inc., New York announces that it has acquired the business of the Products Color Corp. and is prepared to supply at once any goods formerly marketed by that company. E. F. Ernst, formerly president and treasurer of the Products Color Corp., is now associated with the Carbic Color & Chemical Co., Inc.

A. J. Winkler Establishes Testing Laboratory

A new chemical and physical testing laboratory for the textile trade has been established at 40 Worth St., New York, by Adolph J. Winkler, until recently associated with Cox, Fuller & Mauersberger, textile consultants. Mr. Winkler will specialize on the analysis of imperfect materials to determine the causes of defects and to suggest methods for their elimination. At the present time Mr. Winkler is president of the New York Section of the Lowell Textile Institute Alumni Association, and is also a member of the Brooklyn Polytechnic Institute Alumni, the American Chemical Society, the North Jersey Chemical Society, and the Chemists' Club. An extensive practical and laboratory experience in the textile industry fits him to conduct both chemical and physical investigations of textile materials.

Philadelphia Quartz Co. Celebrates 100th Anniversary

The 100th Anniversary of the Philadelphia Quartz Co. was celebrated by a dinner on Jan. 26, 1931, at one of the leading hotels in Philadelphia. About 200 people were present, including the personnel of the various departments at the general offices, out of town sales representatives and a group from the factories. The oldest person present was John McNamee, who became associated with the company 60 years ago.

William T. Elkinton, chairman of the board of directors, and grandson of the founder, Joseph Elkinton, reviewed the historical background of the company. An interesting tableau contrasted the business office of Joseph Elkinton in 1831 with the activity of the 1931 office.

Lamb Knitting Machine Co. Equipment Sold to Julius Botwinik

Tools, machinery and equipment of the Lamb Knitting Machine Co., Chicopee Falls, Mass., were sold recently at an auction conducted by Henry S. Anthony & Co., of Lowell. The entire equipment, with the exception of patterns, jigs, parts, etc., for knitting machines, was sold in lots to some 70 different purchasers. The other materials are offered at private sale.

Wayne Davies Joins J. E. Rhoads & Sons

Wayne Davies resigned his position with E. F. Houghton & Co. as manager of leather sales as of Jan. 1 and has since joined the sales organization of J. E. Rhoads & Sons as sales engineer. Mr. Davies has had a wide experience in transmission, conveying and hydraulic packing design and is well known in many industrial plants.

Drying Form Concern In New Quarters

Philadelphia Metal Drying Form Co. is located in new and larger quarters at N. E. Cor. 8th St. and Columbia Ave., Philadelphia, where it is in position to render improved service to the trade. The firm announces that it took this step because of its confidence in the hosiery business and the general revival of business.

As easy as rolling off a log...

Incorporated in the new Wildman Full-Fashioned Hosiery Machine are many features which are entirely the result of our years of study of this type of machine in practical operation. One feature for example is the slow-motion mechanism which is operated by the mere touching af a lever. No effort required. It's as easy as rolling off a log.

Write for further information.

WILDMAN MFG. CO.
FULL-FASHIONED DIVISION
NORRISTOWN, PA.

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co	61	75
American Yarn & Processing Co.	51	62
Chadwick-Hoskins Co. (Par $25)	7	9½
Chadwick-Hoskins Co., 8%, pfd.	85	88
China Grove Cotton Mills	..	80
Climax Spinning Co	50	61
Clover Mills	..	21
Converse, D. E. Co	..	80
Crescent Spinning Co.	44	53
Dixon Mills	84	91
Durham Hosiery, 6%, pfd	20	25
Eagle Yarn Mills	50	61
Efird Mfg. Co.	..	48
Erwin Cotton Mills	..	110
Erwin Cotton Mills Co., 6%, pfd	80	93
Flint Mfg. Co.	..	70
Flint Mfg. Co., 7%, pfd	..	90
Globe Yarn Mills (N. C.)	..	15
Gray Mfg. Co.	..	65
Hanes, P. H. Knitting Co	7	10
Hanes, P.H. Knitting Co., 7%, pfd.	85	95
Henrietta Mills, 7%, pfd.	35	42
Imperial Yarn Mills	..	55
Linford Mills	35	50
Locke Cotton Mills Co	35	50
Majestic Mfg. Co.	98	115
Mansfield Mills	..	50
Mooresville Cotton Mills	..	4
Mooresville Cotton Mills, 7%, prior	..	68
Myers Mills	..	55
Myrtle Mills	..	50
National Yarn Mill	45	60
Perfection Spinning Co.	51	62
Ranlo Mfg. Co	..	101
Roanoke Mills	..	48
Rosemary Mfg. Co., pfd., 7½%	90	95
Rowan Cotton Mills Co.	52	65
Seminole Cotton Mills Co.	..	65
Sterling Spinning Co	50	62
Stowe Spinning Co	50	60
Victory Yarn Mills Co.	..	38
Ware Shoals Mfg. Co.	105	120
Ware Shoals Mfg. Co., 7%, pfd.	80	92
Winget Yarn Mills Co.	..	42
Wiscassett Mills Co.	145	160

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co.	52	50	55
Amoskeag	8¾	..	..
Arlington	16½	17	19
Associated Textile	36¼	34	37
Bates	64	59	64
Berkshire Associates, com.	7½	7	10
Berkshire Associates, pfd.	25	30	..
Bigelow-Sanford, com	28	..	..
Boott Mills	120½	..	108
Edwards	80¼	58	62
Esmond, pfd.	98	95	98
Farr Alpaca	50½	49	51
Hamilton Woolen	40	34	36
Hill	9	9	12
Indian Orchard	20½	15	20
Ludlow	117½	111	114
Merrimack com.	35	21	25
Nashua, com.	10½	5	7
Nashua, pfd.	66	31	..
Naumkeag	84	80	84
Newmarket	16½	10	13
Otis	43	30	32
Pacific	20¾	..	..
Pepperell	80½	76	79
Plymouth Cordage	66	69	71
York	8¼	6	8

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co.	272	..
Barnard Mfg. Co.	5	10
Berkshire (com.)	8	..
Berkshire (pfd.)	30	..
Bourne Mills	11	..
Border City Mfg. Co.	3	..
Charlton Mills	33	..
Cornell Mills	4	..
Davis Mills	..	4
Davol Mills	1½	4
Flint Mills	..	46
General Cotton	..	3
King Philip Mills	..	..
Laurel Lake Mills (com.)	..	5
Laurel Lake Mills (pfd.)	3	..
Luther Mfg. Co.	..	80
Merchants Mfg. Co.	18	..
Narragansett Mills	..	5
Pepperell Mfg.	76	..
Pilgrim Mills	29	..
Richard Borden Mfg. Co.	1	3
Sagamore Mfg. Co.	58	..
Shove Mills	..	5
Stafford Mills	..	1
Stevens Mfg. Co.	29	..
Union Cotton Mfg. Co.	8	..
Wemteaoe Mills	..	1

TEXTILE WORLD Cotton and Wool Index Numbers

WITH the exception of raw cotton which advanced two points, each of the cotton and wool index numbers continued its downward trend in the first month of the new year. The cotton index displayed an advancing tendency throughout the month and in the fourth week touched 84. This index is now four points above the record low touched in December. Cotton manufactures failed to reflect this strength in the raw material, yarns moving off four points to a new low of 102; gray goods receded 2 points from the previous low record touched in December, and colored goods are off 3 points.

Raw wool and its manufactures, which had been quite stable during the last six months of 1930, showed even greater weakness in January than did the cotton group. Wool was off 7 points, tops 4 points, yarns 6, and cloth 3. Wool is now at the lowest point since September, 1921, while tops and yarns are at new low points for these index numbers. The cloth index appears relatively high as the staple fabrics involved have not been adjusted.

Inquiries regarding interpretation and use of TEXTILE WORLD index numbers may be addressed to the Statistical Dept., 1427 Statler Bldg., Boston, Mass.

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Average for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January	192	197	195	173	184	187
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
1926						
January	167	175	177	162	170	171
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
1927						
January	107	134	140	140	140	138
April	118	136	143	142	143	140
July	143	149	156	145	151	150
October	168	176	184	169	176	176
1928						
January	151	163	166	166	166	165
April	164	160	160	165	162½	162
July	174	167	165	168	166½	167
October	157	161	162	164	163	162
1929						
January	162	166	158	169	163½	164
April	163½	164	157	173	165	165
July	149	160	149	166	158	158
October	147	160½	155	161	158	158
1930						
January	138	149	141	157	149	149
April	131	139	129	156	143	142
July	105	120	119	142	130	128
October	85	110	115	125	120	117
1931						
January	82	102	107	124	115	112

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1924	100	100	100	100	100
1925					
January	215	213	211	229	221
April	219	234	230	241	235
July	216	217	216	239	227
October	216	212	212	227	220
1926					
January	215	213	211	229	221
April	181	193	198	224	208
July	173	184	189	215	199
October	178	186	193	209	198
1927					
January	178	187	190	209	198
April	177	182	184	211	196
July	180	183	183	211	196
October	185	185	189	211	199
1928					
January	194	193	186	212	201
April	199	206	198	215	208
July	204	206	203	214	209
October	197	197	203	212	206
1929					
January	199	198	201	211½	206
April	187	189	198	211	202
July	169	170	188	211	194
October	164½	169	188	211	194
1930					
January	148	161	177	211	188
April	127	139	164	202	175
July	125	135	158	200	171
October	124	135	154	200	170
1931					
January	112	127	148	197	165

Textile Calendar

International Association of Garment Manufacturers, 24th Annual Convention and 18th Annual Textile and Machinery Exposition, Hotel Stevens, Chicago, March 3 to 5, 1931.

Export Managers Club of New York, Annual Get-together Meeting, Hotel Pennsylvania, New York, March 3, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Textile Operating Executives of Georgia, Spring Meeting, Georgia School of Technology, Atlanta, Ga., March 13, 1931.

National Association of Waste Material Dealers, Eighteenth Annual Meeting, Congress Hotel, Chicago, March 16 to 18, 1931.

Wool Blanket Manufacturers Association, Quarterly Meeting, Hotel Pennsylvania, New York, March 27, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 23 to 25, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

National Knitted Outerwear Association, annual meeting, probably at Atlantic City, June 1931 (exact date to be set).

NEWS about MEN

✦ EARLE L. MILLIKEN, for the last two years president and treasurer of the Waypoyset Mfg. Co., at Centrals Falls, R. I., has resigned his position. The resignation, became effective Jan. 15. As far as can be learned no successor to Mr. Milliken has been named. Mr. Milliken went to the Waypoyset Mfg. Co. from the Belamose Corp., Rocky Hill, Conn., where he was treasurer and general manager. Prior to that he was assistant manager of the Blackstone Valley Gas & Electric Co., Woonsocket, R. I.

✦ JOHN H. ORR, president and secretary of the Worcester (Mass.) Bleach & Dye Works Co., has been elected on the board of managers of the Employers' Association of Central Massachusetts.

✦ A. W. SHUTTLEWORTH, president of the Mohawk Carpet Mills, Amsterdam, N. Y., has returned from a sojourn in Florida.

✦ ELLIS M. JOHNSTON was named president of the Woodside Cotton Mills Co., Greenville, S. C., along with the following other officers: J. DAVID WOODSIDE, vice-president; E. F. WOODSIDE, vice-president and secretary, and ALESTER G. FURMAN, JR., assistant treasurer, and GEORGE BROWNLEE, assistant secretary. Woodside directors are: ELLIS M. JOHNSTON, J. DAVID WOODSIDE, E. F. WOODSIDE, J. E. SIRRINE, ALESTER G. FURMAN, JR., Greenville; FLOYD W. JEFFERSON, F. L. KEEN, and OLIVER ISELIN, New York City and M. TOMS, of Morristown, N. J. E. F. Woodside was elected president of the Easley (S. C.) Cotton Mills. Other officers are: ELLIS M. JOHNSTON, vice-president and treasurer; J. DAVID WOODSIDE, vice-president and secretary; ALESTER G. FURMAN, JR., assistant treasurer, and GEORGE BROWNLEE, assistant secretary. Directors of the Easley Mills are: B. E. GEER, W. G. SMITH, B. P. WOODSIDE, E. F. WOODSIDE, J. E. SIRRINE, Greenville; M. TOMS, OLIVER ISELIN, ALESTER G. FURMAN, JR., of Greenville.

✦ JOSEPH P. CARNEY, president of the Gardner (Mass.) Fibre Co., has been elected president of the Gardner Industrial Corp.

✦ WALTER H. LANGSHAW was re-elected president and agent of the Dartmouth Mfg. Co., New Bedford, Mass., at the annual meeting of the corporation. CLIFTON W. BARTLETT was re-elected treasurer, and directors re-elected for the year being MR. LANGSHAW MR. BARTLETT, HATTON LANGSHAW, ALBERT C. LANGSHAW, GARDNER W. BULLARD, JOSEPH W. POWDRELL, and ROBERT R. JENKS.

✦ WILLIAM H. FURNESS was elected president of the Furness Corp., Gloucester City, N. J., at a meeting last week. WILLIAM B. CHAMBERLIN was elected chairman of the board; S. F. HANSELL, vice-president; and J. V. PIMM, secretary and treasurer.

✦ MORGAN M. BUTLER, JAMES G. BACON and JOHN F. GLENNON have been elected directors of the Quissett Mill, New Bedford, Mass., to succeed the late FREDERIC TABER, FRANK K. HALE and ROBERT T. SNELLING.

✦ THEODORE T. ELLIS, president and treasurer of the New England Fibre Blanket Co., Worcester, Mass., has retired as president and treasurer of the Royal Worcester Corset Co., Worcester, and has been made chairman of the board. Among the directors elected were JOHN F. TINSLEY, vice-president and general manager of the Crompton & Knowles Loom Works and HARLAN T. PIERPONT, treasurer of the Worcester Silk Mills Corp., with the latter as clerk and member of the executive committee.

W. S. Febiger, president of the Boston Wool Trade Association, who presided at the annual banquet which was reported in these columns last week.

✦ CHARLES E. RILEY, THOMAS F. CARPENTER, EDWARD L. MARTIN, FREDERIC W. HOWE, EDGAR F. TABER, OLIVER R. BROWN and JOSEPH W. BAILEY were elected directors of the Booth Mfg. Co., New Bedford, Mass., at the annual meeting of the corporation. Mr. Taber was re-elected treasurer, and Mr. Bailey agent for the coming year.

✦ SOLON D. BAUSHER, of Infants' Socks, Inc., Reading, Pa., and treasurer of the Glorie Underwear Mill, Inc., Eufaula, Ala., sailed last week for Jamaica where he will spend several weeks' vacation.

✦ ABBOTT P. SMITH, LATIMER W. BALLOU, THOMAS F. GLENNON, EDWARD H. COOK, FREDERIC W. HOWE, and JOSEPH T. KENNEY were re-elected directors of the Old Colony Silk Mills Corp., New Bedford, Mass., at the annual meeting of the company.

✦ MATTHEW P. WHITTALL, president and treasurer of the M. J. Whittall Associates, Ltd., Worcester, Mass., and MRS. WHITTALL, sailed from New York on Feb. 14 on the S. S. "France" for a Mediterranean cruise.

✦ ALEXANDER LONG was re-elected president and treasurer of Arcade Cotton Mills, Rock Hill, S. C.; ALEXANDER LONG, JR., assistant treasurer, and SIDNEY ADAMS, secretary. After the meeting ALEXANDER LONG, JR., resigned to enter another line of business in Rock Hill.

✦ EDWARD E. HORNER, president, Horner Brothers Woolen Mills, Eaton Rapids, Mich., has been elected a director of the Equitable and Central Trust Co., Detroit, Mich. He is also a director of the Central Trust Co., Lansing, Mich.

✦ J. E. MCLOUGHLIN again heads the Supreme Underwear Mills, of Utica, N. Y., C. B. MASON, vice-president; R. P. MCLOUGHLIN, secretary and treasurer; W. DAVIES, assistant-treasurer and G. L. GRANT cashier. The directors are: J. E. and R. P. MCLOUGHLIN, W. P. MCGRAIL, C. B. MASON and C. M. QUINN.

✦ CHARLES H. ROGERS, BEECHER M. CROUSE and BIERNE GORDON JR., of Utica, N. Y., CHAS. R. COPPEL, New Hartford, N. Y., and RODNEY W. JONES of New York City, were elected to the board of directors of the Duofold Health Underwear Co., of Mohawk, N. Y., at the annual meeting.

✦ A. ELLSWORTH LEINBACH was reelected president; SAMUEL W. REIFF secretary and treasurer and CHARLES H. R. LEINBACH vice-president of J. G. Leinbach Co., Reading, Pa., manufacturer of woolen fabrics for men's suits and overcoats, at its annual meeting. The above were reelected directors, with CHARLES G. LEINBACH and HARRY L. LEVAN.

✦ LUTHER M. BUTMAN was re-elected president of the Empire Worsted Mills, Inc., Jamestown, N. Y., at the annual meeting of that organization. Other incumbents were also re-elected.

✦ B. GIRO, prominent cotton importer of Barcelona, Spain, is visiting Dallas, Houston and Galveston, Tex., cotton exchanges.

✦ J. J. SCOTT, president of Scottdale (Ga.) Mills, has been elected president of Decatur (Ga.) chamber of commerce.

✦ A. S. CLARK, head of Clark Brothers, Glens Falls, N. Y., is among the newly elected directors of the National Bank of Glens Falls.

✦ E. H. WELCH, formerly president of the Federal Spun Silk Corp., Watervliet, N. Y., has taken the position as superintendent of the Jupiter Textile Co., in that city.

✦ C. H. CARTER, vice-president and general manager of the Portland Woolen Mills, and J. TANO PETERSON of the McCreery Mfg. Co., Portland, Ore., were elected to membership of the board of directors of the Oregon Manufacturers Association at the 14th annual meeting held recently.

✦ SPAULDING BARTLETT of the Chilton Co., Webster, Mass., has been named temporary chairman of a citizens' committee of 200 to make arrangements for the celebra-

tion of the 100th anniversary of that town in 1932. SHERMAN L. WHIPPLE, president and general manager of the Chilton Co., was named a member of the survey committee.

✦ ALLAN BARROWS was re-elected treasurer of the Gosnold Mills Co., New Bedford, Mass., at the annual meeting of stockholders held Feb. 10. JOHN M. BULLARD was elected clerk; directors elected being HENRY H. CRAPO, HENRY S. KNOWLES, CHARLES L. HARDING, LAURANCE D. CHAPMAN, STANFORD T. CRAPO, JOHN M. BULLARD, ALLAN BARROWS, BRYANT PRESCOTT and HENRY A. WYMAN.

✦ J. P. MARGESON, JR., former general manager of the Sulloway Mills, Franklin, N. H., has been appointed general manager of the Phoenix Hosiery Co., Milwaukee, Wis., it has been stated by Herman Gardner, president of the company. The post of general manager is a newly created one. Mr. Margeson will make his headquarters at Milwaukee.

✦ C. S. NEWTON, Philadelphia, Pa., for several years general manager of Barrymore Seamless Wiltons, Inc., of that city, has been appointed general manager of the Artloom Corp., Philadelphia, effective Feb. 1. He will also become vice-president and director of the corporation.

✦ GEORGE SPOFFORD, treasurer of Edwards Mfg. Co., Augusta, Me., and the Androscoggin Mills, Lewiston, Me., which are controlled by the Insull interests, will be general manager of the Delgado Mills, Wilmington, N. C., which were recently purchased by the Insull interests. Mr. Spofford will divide his time between the northern and southern plants.

✦ J. H. REANEY, general manager of the Union Mills, St. Johnsville, N. Y., was chosen president of the First National Bank in that city at the annual organization meeting.

✦ O. F. DURFEY, assistant treasurer and superintendent of Aspinook Co., Jewett City, Conn., will resign Feb. 28. He has been with the company about 14 years, and was assistant superintendent for ten years prior to becoming superintendent.

✦ FRANK L. CLARKE, who for many years was superintendent of the electrical and steam power departments of the Amoskeag Mills, Manchester, N. H., resigned Jan. 26. Mr. Clarke has no business plans for the future.

✦ ERNEST BUCKNER has been promoted from head cloth inspector to overseer of the cloth room at the Dilling Cotton Mills, Kings Mountain, N. C.

✦ J. C. CLARK has resigned as overseer of the cloth room at the Dilling Cotton Mills, Kings Mountain, N. C., and has taken a similar position at the Slater (S. C.) Mfg. Co.

✦ FREDERICK HIGGINS, overseer of spinning at the Wamsutta Mills, New Bedford, Mass., has resigned to accept a similar position with the Lorraine Mfg. Co., Pawtucket, R. I.

✦ J. B. HORNADY has been made overseer of weaving at the Spofford Mills, formerly the Delgado Mills, at Wilmington, N. C.

✦ J. S. POLK, who has for some time been second hand in weaving at the Manetta Mills, Lando, S. C., has been promoted to overseer of the cloth room, succeeding W. H. FERGUSON, who recently resigned.

Obituary

Ethelbert A. Rusden

Ethelbert A. Rusden, aged 72, president of the Textile Finishing Machinery Co., prominent Providence clubman, and a member of several fraternal and business organizations, died early this week in St. Agnes' Hospital, Baltimore, Md., where he had gone for treatment. He was born in Manchester, England, and came to this country in 1887 as a representative of Mather & Platt, English machine manufacturers. He soon became associated with the Lincoln Machine Co., of Hartford, later becoming an official of the firm of Lawrie, Buchannan & Rusden, which he and associates founded. The firm dealt in dyestuffs and chemicals and did business in New York.

In 1899, Mr. Rusden established the Rusden Machine Co. in Warren, R. I., and three years later consolidated with three other machine manufacturers, the Granger Foundry & Machine Co., the Thomas Phillips Co. and the Phenix Iron Works, all of Providence, to form the Textile Finishing Machinery Co. Mr. Rusden was president and general manager of this firm for many years. Other organizations to which he belonged are the American Society of Mechanical Engineers, the Providence Engineering Society, the Turk's Head Club, the Squantum Club, the Quequechan Club of Fall River and the Rhode Island Country Club. He also held membership in Masonic lodges.

Thomas Develon, Jr.

Thomas Develon, Jr., sole owner of Thomas Develon, Jr., carpet manufacturing concern, Philadelphia, died at his home, Feb. 12, at the age of 63 years. He was a prominent manufacturer of wilton carpets and rugs and was also one of the most active factors in Philadelphia real estate. Mr. Develon was active in politics and in sporting fields. Recently he negotiated for the purchase of property in Philadelphia valued at $5,000,000 at 13th and Market Sts. He owned many of the best horses on Eastern race tracks and was president of Cedar Park Driving Club for a number of years. He was a delegate to the Republican National Convention in Chicago and was an important contributor to funds of the Republican Party over a period of many years. He was a member of the Union League, Manufacturers' Club, White Marsh Country Club and the Masonic Order.

Archibald M. Robinson

Archibald Magill Robinson, 72 years of age, retired woolen manufacturer, died last week at his home in Louisville, Ky. Mr. Robinson some years ago was secretary-treasurer of the old Louisville Woolen Mills, of which his father, Richard Alexander Robinson, was one of the founders. This company, operated by R. A. Robinson Sons Co., was active for many years and Mr. Robinson was vice-president and director in later years, retiring in 1906, when the mills changed hands.

E. A. Rusden

Col. George Rodney Wallace

Col. George Rodney Wallace, president of the Rodney Wallace Co., Fitchburg, Mass., founded by his father, and former president of the Grant Yarn Co., Fitchburg and also the Aetna Mills, Fitchburg, died at his home in that city on Jan. 28, following a long period of ill health. He was a member of one of Fitchburg's pioneer families and retired from active life about two years ago when he entered a health sanitarium in Clifton Springs, N. Y.

Herbert D. Pickering

Herbert D. Pickering, purchasing agent of the Collins & Alkman Corp., Philadelphia, for more than 14 years, died last week at his Germantown home at the age of 61. He began his textile career in Manchester, N. H., where he was born. He was later associated with the Pickering Knitting Co., Lowell, Mass., and the Tremont & Suffolk Co., also of Lowell. He had a high reputation as a most capable purchasing agent. Surviving him is his widow. Interment was at Lowell, Mass.

Charles S. Bonsall

Charles S. Bonsall, founder and head of the Penn Rug Works, Philadelphia, died of pneumonia at his home Feb. 7 after a four day illness. He was 63 years old and a native of Philadelphia, being a graduate of the University of Pennsylvania and the Yale Law School. He established the concern of which he was the head more than 30 years ago.

Horace Kenworthy

Horace Kenworthy, aged 59, retired worsted yarn manufacturer, died this week at his home, 460 Lyceum Avenue, Philadelphia. Funeral was held at Roxborough, a suburb. Mr. Kenworthy retired from the yarn business about five years ago. His widow and three children survive him.

NEWS about MILLS

Cotton

Tallassee (Ala.) Mills have placed with Saco-Lowell an order for machinery to completely modernize the mills. The new equipment will include large package spinning frames of extremely wide gage.

Powdrell-Hunt Co., a subsidiary of **Powdrell & Alexander, Inc.,** Danielson, Conn., will locate a plant at 1646 Arapahoe St., Denver, Col., for the manufacture of curtain materials.

Augusta (Ga.) Factory. At a meeting of stockholders called for Feb. 19, a committee consisting of Samuel A. Fortson, president; Charles H. Phinizy and Wm. E. Bush, reported what plan, if any, can be adopted to prevent the mill from shutting down indefinitely. The company did not pay any interest on its outstanding indebtedness during the year 1930.

***Clark Thread Co.,** Newark, N. J., announced that contract for the erection of mill buildings for its new 40,000 spindle unit at Austell, Ga., was let to the A. K. Adams & Co., Atlanta, Ga., general contractors, Feb. 10. It was stated that the Atlanta firm's bid was for $450,000, and that construction work is to begin immediately. Contract for the erection of operatives' houses will be awarded later.

Harmony Mills, Cohoes, N. Y., sateens, twills and shirtings, have started up 900 additional looms and recalled many workers because of increased orders.

Sapphire Cotton Mills, Brevard, N. C., 6,100 spindles, which have been idle for more than a year, will be reorganized and operations resumed in the near future, according to plans recently announced. B. E. Geer, of Judson Mills, Greenville, S. C., will aid in the reorganization and most of the stock will be held by Greenville and Brevard people. The mill has a weekly payroll of from $1,200 to $1,400.

Avon Mills Co., Gastonia, N. C., which has been idle for about eight months, resumed part-time operations Feb. 11, running daytime only. W. L. Balthis, who was appointed receiver for the mill several weeks ago, stated that continued operation depends entirely upon the market for combed yarns.

Caswell Cotton Mills, Inc., Kinston, N. C. Plans are said to be under way for a resumption of operations at this plant, now inactive, and an effort is being made to secure necessary capital for that purpose.

Proximity Mfg. Co., Greensboro, N. C., recently awarded contract to Tucker & Laxton, Inc., Charlotte, N. C., for installation of sewer lines in the four villages of the Cone mills. The new system will be connected with the city's sewage disposal plant on North Buffalo Creek and will be completed this year at a cost of approximately $125,000. Gilbert C. White, Charlotte, N. C., consulting engineer, is in charge of the work.

**Indicates previous mention of project.*

Caswell Cotton Mills, Inc., Kinston, N. C., will be refinanced and again placed in operation if efforts of the Kinston Chamber of Commerce to sell a $100,000 stock issue are successful. Suspension of plant operations last fall was decided upon after death and other circumstances had reduced the number of directors from twelve to four. The company has practically no liabilities except to its stockholders but needs additional working capital. The plant is equipped with 16,224 ring spindles for the production of 12s to 30s, single and ply, hosiery and underwear yarns.

Pacific Mills, Columbia, S. C., recently awarded the Borne Scrymser Co. an order for a set of Breton Mineroil Model R process equipment for oil spraying of cotton.

Aragon-Baldwin Cotton Mills' three plants located at Chester, Whitmire, and Rock Hill, S. C., are operating on a 55-hour day schedule, with no night operations.

Pacific Mills, Lyman, S. C., have awarded a contract to the J. L. Von Glahn Co., Montgomery Bldg., Spartanburg, S. C., for an addition to filtration plant at the mill.

Tellico Cotton Mills Co., Tellico Plains, Tenn., has resumed a full-time operating schedule, employing both day and night shifts. The mill had been idle for three years until last August, when the building and machinery were repaired. J. O. Blackmon is vice-president and general manager.

Montreal Cottons Ltd., Valleyfield (Que., Can.) is installing new machinery to handle the preparatory and spinning processes, and also adding a number of looms in its plant. Some of the present equipment will be scrapped, but it will be in operation for the best part of this year.

Wool

Shetucket Worsted Mills, Inc., Baltic, Conn., fancy worsteds for men's wear, have installed 28 additional looms which will soon be ready for operation.

Channing Smith Textile Corp., Cherry Valley, Mass., operating three woolen mills, was petitioned in bankruptcy in the U. S. district court at Boston on Feb. 14 by three creditors whose claims aggregate $55,035.05. They are the Hill & Cutler Co., New Bedford, Mass., for $41,536.31; Marble-Nye Co., Worcester, Mass., for $7,995.77 and the Howard Bros. Mfg. Co., also of Worcester, for $5,502.97.

Arden Mill of the **American Woolen Co.,** Fitchburg, Mass., has one of the new high-speed automatic looms at work in its plant and at present is said to be getting about 75% production from it. The mill is junking a number of older looms preparatory to the installation of the new machines. The company recently purchased 300 of these looms from the Crompton & Knowles Loom Works.

Gleasondale (Mass.) Woolen Mills, Inc., which have been closed three weeks, have notified all employes that the plant will remain closed permanently. The mill was established in 1813 by Benjamin W. Gleason and Samuel Dale, and produced fine woolens.

Ricketts & Shaw, Monson, Mass., are operating their No. 2 mill, day and night, following a readjustment of the wage scale.

Webster (Mass.) Mills of the **American Woolen Co.,** are now giving employment to about 500 operatives on a three-shift day basis. It is proposed to increase the working force for the night shift in the weaving department. The increased schedule will be continued for several months, according to present orders on hand.

Philmont (N. Y.) Mfg. Corp., has been formed by local interests with capital of 200 shares of stock, no par value, to operate a mill for the manufacture of wool and rayon fabrics. The company will be represented by Connor & Eaton, Hudson, N. Y., attorneys.

Parker-Wylie Carpet Mfg. Co., Philadelphia, Pa., operated by **Parker-Wylie Carpet Co.,** New York, has secured, through the latter organization, a controlling interest in the **Monmouth Rug Mills, Inc.,** Englishtown, N. J., for which Parker-Wylie Carpet Co., has been acting as sales agents. It is planned to consolidate operations at an early date at the Philadelphia mill, and property at Englishtown will be sold.

Intermountain Worsted Co., plans to begin construction March 1 of a worsted wool plant at Orchard, near Ogden, Utah. The plant, which will produce cloth goods and yarn, will take until Oct. 1 to finish. According to Oscar Clawson, Salt Lake City live stock man and a director in the company, present plans call for the erection of a plant in two buildings 90x600 ft. Officers and directors of the company, besides Mr. Clawson are Arthur Whetstone, of Chesterfield, Pa., president; W. A. Snyder, of Denver, Colo., secretary-treasurer; Ralph Brough of Nephi, Douglas Clifford, of Ogden, additional directors. Mr. Clawson stated his com-

pany had closed a deal with the Bamberger Electric Co. for 20 acres of land at Orchard.

Washougal (Wash.) Woolen Mills are constructing a 60 ft. addition to their one-story finishing department, according to W. C. Webster, manager of the mills.

Knit

Orange Blossom Knitting Mills, Los Angeles, Calif. Stock, fixtures and equipment of the plant were sold at auction by Michael M. Weisz on Feb. 6. The firm formerly manufactured sweaters and fancy knit goods.

Union Mills, Inc., operating eight plants in New York State, voted to liquidate at their annual meeting held last week. The firm will continue to fill orders for a time but expects to dispose of its assets within a year. Its plants are located in Hudson, Catskill, Herkimer, St. Johnsville and Mechanicsville, N. Y., and manufacture cotton ribbed underwear for women and children.

Asheville (N. C.) Hosiery Co. has authorized an addition to its plant that will double capacity, R. G. Hoch, plant manager, announced. An outlay of $90,000 will be represented in the addition. The building will be two-story, of brick, steel and glass. A dyeing and finishing department will be provided as well as additional floor space for knitting machines. More than 100 additional employes will be placed on the payroll. R. T. Rogers, of Philadelphia, is president of the company and D. R. Baer, of Asheville, treasurer.

Conover (N. C.) Knitting Co. has been chartered for the manufacture of hosiery. Authorized capital stock is $100,000, subscribed $3,500 by A. L. Shuford, Jr., Annie W. Shuford, and A. L. Shuford, all of Conover.

A. W. Neimeyer & Co., Graham, N. C., are now completing the installation of three full-fashioned hosiery machines and have ordered four more which will be installed as soon as they arrive.

Dehen Knitting Mills, Portland, Ore., have installed new machinery for the manufacture of three-piece knit suits, according to C. Dehen, manager. Bathing suits, sweaters and other knit goods are also produced by this plant.

***Bell Knitting Co.,** Lebanon, Pa., has started operations with 40 employes and 37 machines manufacturing rayon silk underwear for men, women and children. According to the superintendent, Jack Turner, the company is installing additional machinery and before the end of February about 100 people will be employed. Sanford Koenigsberg is general manager of the plant.

Herbert Hosiery Mills, Norristown, Pa., have erected an addition to their mill and are installing full-fashioned hosiery equipment. Eight machines are now in operation producing women's sport hose in various mixtures of wool, cotton and silk.

**Indicates previous mention of project.*

Society Maid Hosiery Mills, Willow Grove, Pa., have taken bids on general contract for a one-story brick and steel addition, and will begin superstructure at an early date.

Kingston Mfg. Corp., Central Falls, R. I., recently formed with a capital of $136,300, to operate a local knitting mill, will be represented by Milton Baum, 45 Whittemore Rd., Newton, Mass., one of the incorporators. Other incorporators are Abraham and Louis Lotow.

Crescent Hosiery Mill's (Niota, Tenn.) stockholders have announced that employees would be paid an 8% increase in their wages. It is reported that this company has had a very successful year and that a 10% dividend was paid to stockholders.

Phoenix Hosiery Co. is moving operations of its Cedarburg, Wis., plant, the **Jayef Hosiery Co.,** to Milwaukee, it was announced last week by Parker Margeson, general manager. Twelve machines are being brought from Cedarburg to Milwaukee.

C. Turnbull Co., Ltd., Galt (Ont., Can.), has been incorporated with a Dominion charter, with authorized capital of 25,000 no par value shares. The company will continue to make textiles.

Herbert Hosiery Mills of Canada, Ltd., Toronto (Ont., Can.), have been incorporated with a federal charter and authorized capital of 1,000 shares at $100 and 100,000 no par value shares. The new mill of the company, a branch of the **Herbert Hosiery Mills, Inc.,** Norristown, Pa., is located at No. 2 River St., Toronto. The plant will begin with a production of 1,000 dozen children's socks daily.

Silk

***Willimantic (Conn.) Silk, Inc.,** reports brick work has been completed for the new one-story silk throwing mill. Contractor Oliver L. Willard expects to have the work done early in March.

McLane Silk Co., Inc., Turners Falls, Mass., has been acquired by a Paterson, N. J. concern, identity of which is withheld. Present looms will be replaced by a wider type to allow for greater diversity of manufacture. Chiffons and georgettes will be produced. It is believed two or three months will be required for changes. Employes of McLane's will have employment preference.

Shiller-Hermann Silk Co., West New York, N. J., has taken title to the two-story mill now occupied at 592-98 Twelfth St., near Jackson St., on site, 100x125 ft., heretofore held in the name of Nathan Shiller and Morris Hermann, officials of the company.

***Western Canada Silks, Ltd.,** a fully organized company with head office in Vancouver, Can., will make an early start in the anticipated erection of a $250,000 mill at Port Moody (B. C.) Can. The ratepayers of Port Moody recently approved a by-law granting permission to the company to erect the silk mill on a site offered by the municipality.

Finishing

United Textile Print Works, Long Island City, N. Y., have leased buildings on 33rd St., near Webster Ave., totaling about 40,000 sq.ft. floor space, for local plant.

Keystone Finishing Mills, manufacturers of men's half hose, which moved to Asheboro, N. C., recently from Burlington, have begun operations with machines installed from the Burlington plant.

Hartsville (S. C.) Print & Dye Works have just completed a modern butane gas plant, which will furnish the company with gas.

Textile Patents

AUTOMATIC setting machine. 1,791,373. William Pearsall, Thompsonville, Conn. Assigned to Bigelow-Sanford Carpet Co., Thompsonville, Conn.

BATHING-suit. 1,790,702. Adolph L. Friedenthal, Portland, Oregon.

CLOTH, Method and apparatus for stenciling on. 1,786,347. Charles F. Kennedy, Stamford, Conn. Assigned to Harry Verran, Stamford, Conn.

COTTON-CHOPPER and cultivator, Cross row. 1,786,241. Arthur Hightower, Frost, Texas.

COTTON PACKER. 1,786,240. Arthur Hightower, Frost, Texas.

DEVICE for stopping delivery in spinning and twisting machines on the breaking of the thread. 1,786,275. Johannes von Trumbach, Dusseldorf, Germany.

DRAWING FRAME with passages for use on spinning machines. 1,786,180. Johannes von Trumbach, Dusseldorf, Germany.

EMBROIDERING machine. 1,791,321. Walter Meyers, Bridgeport, Conn. Assigned to Singer Machine Co., Elizabeth, N. J.

FABRICS, Method and apparatus for stretching. 1,786,188. Arnold Bosshard, Arbon, Switzerland. Assigned to Sir James Farmer Norton & Co., Lancashire, England.

FLAX separator. 1,791,245. Walter Parliament, Hazel S. Dak.

HOSIERY. 1,791,405. George E. Fichtner, and Morris G. Van Orsdale, Essex County, N. J. Assigned to Van Raalte Co., Inc., New York.

KNITTING machine. 1,786,255. Max C. Miller, Cumberland, R. I.

KNITTING machine. 1,791,467. Patrick P. La Montagne, Kankakee, Ill. Assigned to Paramount Textile Machinery Co., Kankakee, Ill.

LOOMS, Lug strap for. 1,790,966. Walter Anderson, Killingly, Conn. Assigned to Anderson Mill Supply Co., Killingly, Conn.

MECHANISM, Spindle stopping, for spinning and twisting machines. 1,790,815. Fred K. Hendrickson, Worcester, Mass. Assigned to Whitin Machine Works, Whitinsville, Mass.

METHOD of and composition for conditioning wool and the like. 1,791,057. Augustus H. Gill, Belmont, Mass.

PILE FABRIC and method of making the same. 1,785,937. Melville G. Curtis, Cynwyd, Pa. Assigned to Collins & Aikman Corp., Philadelphia, Pa.

PROCESS of opening and preparing artificial silk staple fiber for spinning. 1,785,823. Meinrad F. Thomas, Fitchburg, Mass.

RING SPINNING machines, Separator for. 1,786,235. Leo Gariepy, Woonsocket, R. I.

SPINDLES, Bearing support for spinning or twisting. 1,786,252. George H. McGrath, Whitinsville, Mass.

SPINNING and twisting machine. 1,786,348. Johann Jacob Keyser, Aarau, Switzerland.

THREADS, Separating device for intercrossing. 1,786,238. Willibald Hammer, Uster, Switzerland.

YARN CLEANER and slub detector. 1,785,817. William Marcroft, Cranston, and George N. Taylor, East Providence, R. I. Assigned to Universal Winding Co., Providence, R. I.

YARN TENSIONING device. 1,785,987. Clyde Stewart, Gastonia, N. C. Assigned to Emanuel Frohman, Gastonia, N. C.

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